FEBRUARY • 1953

AMERICAN Cinematographer

THE MAGAZINE OF MOTION PICTURE PHOTOGRAPHY

THEATRE
TELEVISION
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In This Issue . . .

- New Stereo Filming Equipment
- Set Lighting For Pictorial Effects
- The 'Fluid' Camera In Cinematography

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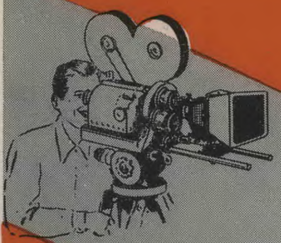

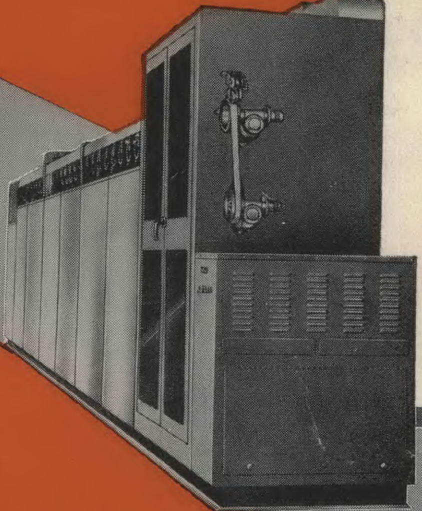

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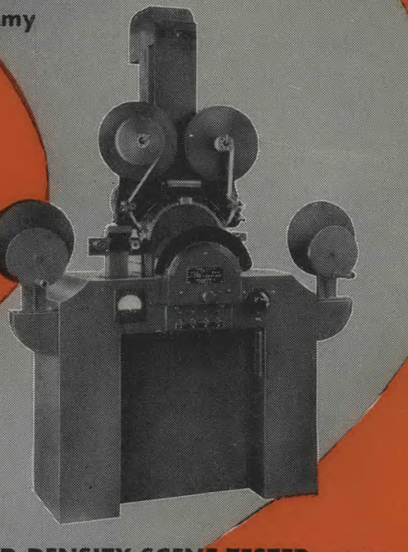

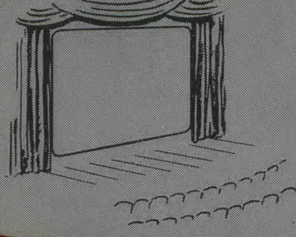

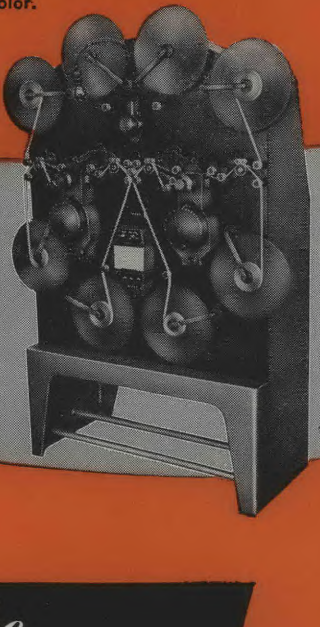

COLOR AND DENSITY SCENE TESTER and Sensitometer Combination accomplishes single frame print tests with 15 combinations of print filters. Provides a quick, easy and accurate method of determining the proper filter pack to be used in color printing. Valuable in balancing two print stock emulsions, indicating variations in overall speed and individual layer speed and in determining the proper processing techniques to control variables of contrasts.

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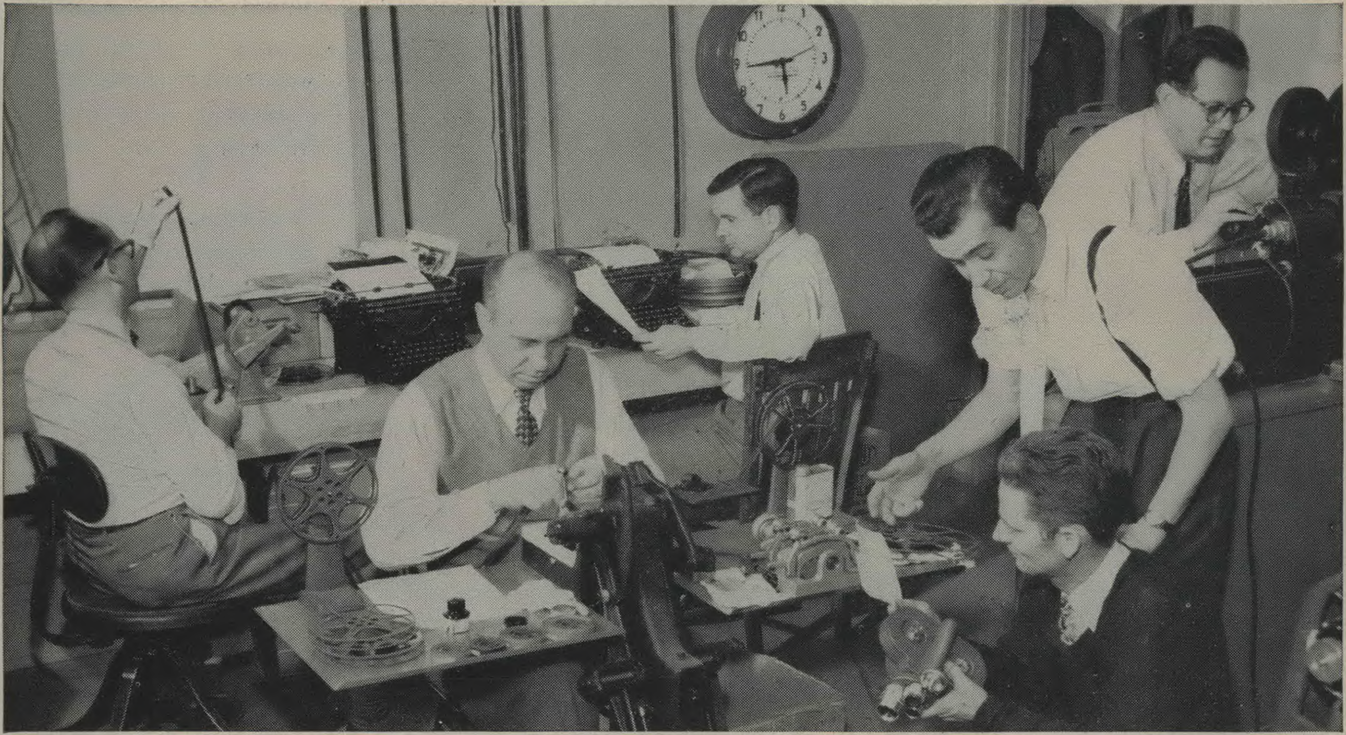
Today's news tonight!

KTTV Staff Uses B&H Equipment To Make Deadlines

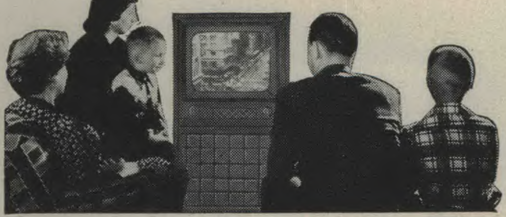
Station KTTV is attracting Los Angeles viewers with a daily "live" news reel. The popularity of this feature depends on getting on-the-spot movies of local events . . . editing and preparing them for showing the same evening . . . and making that showing a *finished* production.

To do this successfully, day in and day out, requires highly competent staff teamwork, plus the finest equipment. The staff at KTTV who work with Bell & Howell camera, projector and editing equipment have found it perfect for the job!

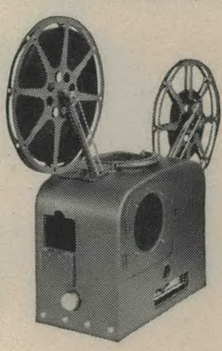
Shooting a street scene with a Bell & Howell 16mm "70" Camera



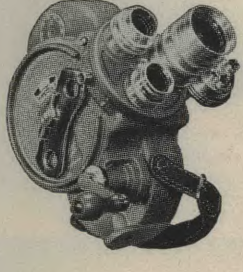
KTTV News Unit at work in the Film Editing Room. Man in center splices film at B&H Film Editor



Single-Case Filmosound Projector. First choice of TV experts for previewing film before broadcasting . . . and for showing film to clients. Projects 16mm film—sound or silent. Complete film protection permits running originals or work prints without fear of damage. Change from forward to reverse or vice versa at flick of a switch—no re-threading necessary. Light, compact, easy to operate.



← Matched For Your TV Needs →



16mm 70-DL Camera. This newest member of the famous B&H 70 series is built with precision . . . versatile enough for most any TV job. The 70-DL operates at 7 precise, governor-controlled film speeds—the 204° open segment shutter giving 1/40 of a second exposure at exact sound speed (24 frames). Can be adapted to take film to which sound is to be added. Three-lens turret assures you of the right lens for any shot . . . instantly. Also has positive viewfinder with matching objectives and parallax correction, critical focuser, and hand crank.

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TOM KELLEY films one of a TV series for David S. Hillman, Inc., for Desco-ware Cooking Utensils with Mitchell 35mm "NC."

Over 30 years ago Mitchell made history with the introduction of the motion picture camera that was to set new photographic standards for a growing industry. *Today,* Mitchell 16mm and 35mm equipment is being used in every field of motion picture photography.

In the field of Television, Mitchell cameras continue to pioneer new techniques and standards. TV films shot with Mitchell cameras reach your home viewing audience *clearer, sharper* and *steadier*—to bring superior quality reproduction to the television screens in millions of living rooms. You can be sure that your television film, whether shot "live" or as an elaborate studio production... whether with one camera or ten, will be a *better* investment because it is filmed with a Mitchell Camera.

Today, as in the history-making years past, Mitchell 16mm and 35mm equipment continues to deliver the world's finest films. You can count on Mitchell—*the 30-year pioneer.*

AMERICAN FILM PRODUCERS use Mitchell 35mm for 50 TV spots for Grant Advertising for U.S. Army and Air Force.

GULF COAST FILMS, INC. uses the 16mm Mitchell Camera in filming "100 Years In Texas" for Southern Pacific Railway.

CATHEDRAL FILMS use two Mitchell 16mm Cameras shooting simultaneously in color in filming their production "Holy Night."

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PUBLICATION OF AMERICAN SOCIETY OF CINEMATOGRAPHERS

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Editorial and Business Office: 1782 N. Orange Dr., Hollywood 28, Calif.
Telephone: GRanite 2135

VOL. 34   FEBRUARY • 1953   NO. 2

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ON THE COVER

ANOTHER MAJOR 3-D color production gets under way in Hollywood with Karl Struss, ASC, (left) directing the photography. The Sol Lesser production was photographed with the Stereo-Cine Corporation's 3-D equipment, which is built around two Eclair 35mm Camerettes. Observing initial use of his company's equipment in a major production is Raphael G. Wolff (striped tie), president of Stereo-Cine Corporation, Hollywood.—*Photo by Gaston Longet*

AMERICAN CINEMATOGRAPHER, established 1920, is published monthly by the A. S. C. Agency, Inc., 1782 N. Orange Dr., Hollywood 28, Calif. Entered as second class matter Nov. 18, 1937, at the postoffice at Los Angeles, Calif., under act of March 3, 1879. SUBSCRIPTIONS: United States and Pan-American Union, $3.00 per year; Canada, $3.00 per year; Foreign, $4.00. Single copies, 25 cents; back numbers, 30 cents; foreign single copies, 35 cents; back numbers, 40 cents. Advertising rates on application. Copyright 1953 by A. S. C. Agency, Inc.

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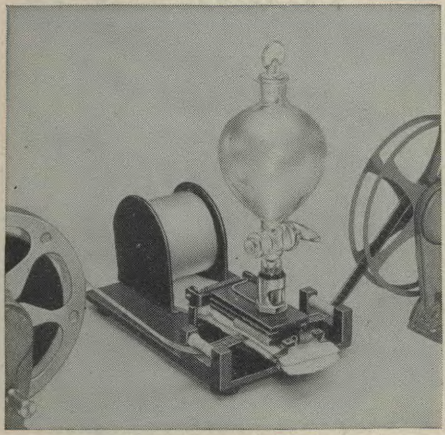

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Hollywood
Bulletin Board

DIRECTORS OF PHOTOGRAPHY of the Hollywood motion picture studios, in a preliminary balloting, have selected ten black-and-white and ten color productions of 1952 as candidate entries for Academy Award nominees for photographic achievement awards.

Nomination ballots were mailed to all directors of photography on January 15th and they will now vote to select the five films in each class as this year's award nominees. Result of nominations balloting will be announced by the Academy through the nation's press on February 10th.

The twenty candidate-films and the directors of photography who filmed them are as follows:

BLACK-AND-WHITE PRODUCTIONS

"Androcles And The Lion," Harry Stradling, ASC, (RKO).

"The Bad And The Beautiful," Robert Surtees, ASC, (MGM).

"The Big Sky," Russell Harlan, ASC, (Fox).

"High Noon," Floyd Crosby, ASC, (Kramer).

"My Cousin Rachel," Joseph LaShelle, ASC, (Fox).

"Navajo," Virgil Miller, ASC, (Lippert).

"Pat and Mike," William Daniels, ASC, (MGM).

"Sudden Fear," Charles Lang, ASC, (Kauffman-RKO).

"The Thief," Sam Levinson, (Popkin-United Artists).

"Viva Zapata," Joseph MacDonald, ASC, (Fox).

COLOR PRODUCTIONS

"Blackbeard The Pirate," William Snyder, ASC, (RKO).

"Hans Christian Andersen," Harry Stradling, ASC, (Goldwyn).

"Ivanhoe," Frederick A. Young, ASC, (MGM).

"The Jazz Singer," Carl Guthrie, ASC, (Warner Bros.)

"The Merry Widow," Robert Surtees, ASC, (MGM).

"Million Dollar Mermaid," George Folsey, ASC, (MGM).

"Moulin Rouge," Ossy Morris, (Romulus Films).

"Prisoner Of Zenda," Joseph Ruttenberg, (MGM).

"The Quiet Man," Winton Hoch, ASC, (Argosy-Republic).

"The Snows of Kilimanjaro," Leon Shamroy, ASC, (Fox).

The five productions selected in each classification in the nominating balloting will be reported here next month.

In the meantime, the Academy is proceeding with its plans to hold the presentation ceremonies the evening of March 19, at the Hollywood Pantages Theatre.

•

ARTHUR MILLER, ASC, three-time Academy Award winner and photographer of more than 150 Hollywood productions, was given an honorary membership last month by Delta Kappa Alpha, national honorary cinema fraternity, at the University of Southern California.

•

GLEN KERSHNER, ASC, retired cinematographer turned author, is completing plans to retire permanently to Tahiti, where he spent many months a few years ago photographing motion pictures and gathering material for his book on the South Seas.

•

THREE-DIMENSION MOVIES currently are a "hot" item with every major studio. Following box-office success of Arch Oboler's "Bwana Devil" and the successful presentation of Cinerama, nearly every major studio either has begun production on its initial 3-D film or plans to do so very shortly.

Studios include Metro-Goldwyn-Mayer, Twentieth Century Fox, Warner Brothers, Columbia, and Universal-International. Columbia and Warners reportedly will use Milton Gunzberg's Natural Vision stereo camera, which were employed by Oboler in his initial 3-D production. Universal is reported as building its own 3-D camera equipment, based on a different arrangement than that of Natural Vision.

Twentieth Century-Fox has completed tests in its own third-dimension process.

In the meantime, Sol Lesser, using 3-D camera equipment of a newcomer in the field, Stereo-Cine Corp., began his initial theatrical production in color and 3-D at RKO-Pathe studios last month, as reported eleswhere in this issue.

Meantime, the activity in 3-D production has been given intense study by the industry's craft unions to determine whether demands should be made for increased crews, and to more sharply define the activities of such crew men as camera operators and assistants. At the present time, the cameramen's union is requiring the addition of another

(Continued on Page 89)

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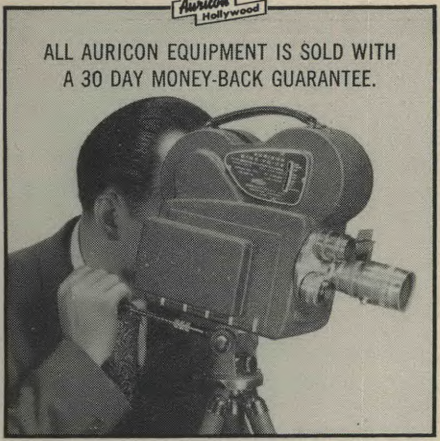

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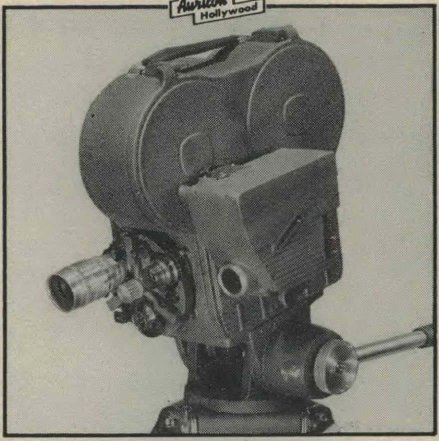
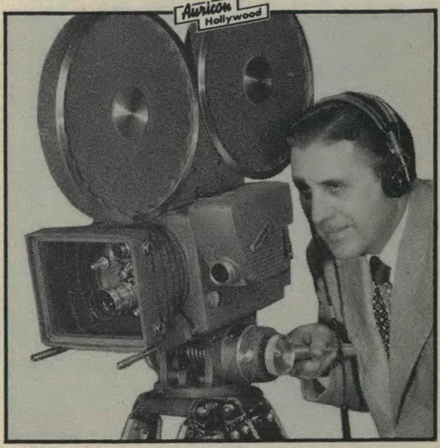
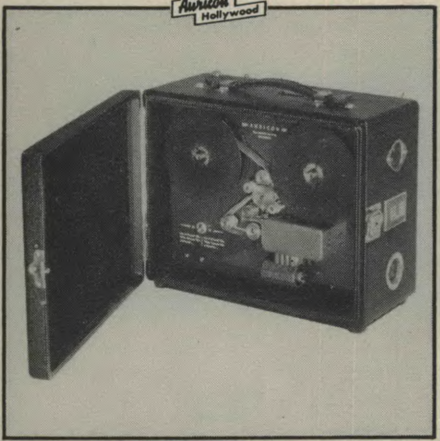
"CINE-VOICE" 16 mm Optical Sound-On-Film Camera. ★ 100 ft. film capacity for 2¾ minutes of recording; 6-Volt DC Convertor or 115-Volt AC operation. ★ $695.00 (and up).



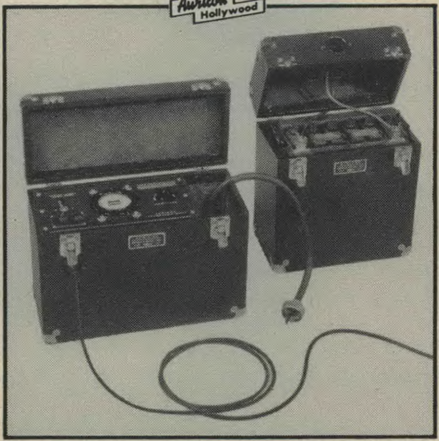
"AURICON-PRO" 16 mm Optical Sound-On-Film Camera. ★ 200 ft. film capacity for 5½ minutes of recording. ★ $1310.00 (and up) with 30 day money-back guarantee.



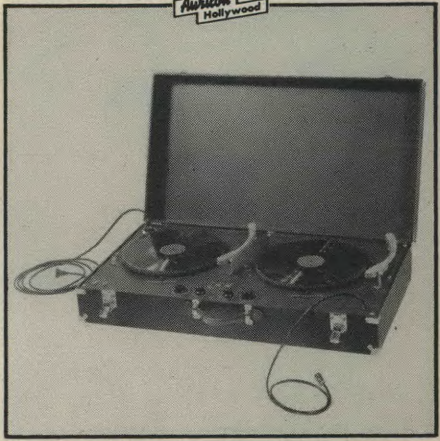
"SUPER 1200" 16 mm Optical Sound-On-Film Camera. ★ 1200 ft. film capacity for 33 minutes of recording. ★ $4315.65 (and up) complete for "High-Fidelity" Talking Pictures.



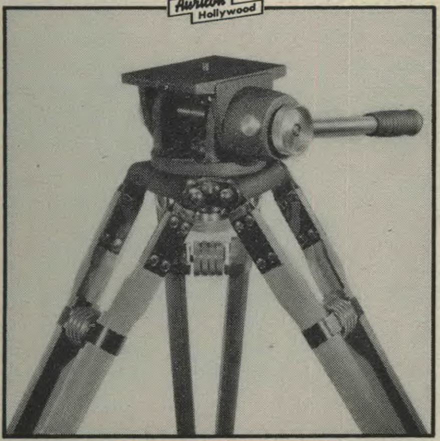
SOUND RECORDER—Model RT-80...200 foot film capacity, daylight loading, synchronous motor for portable "double-system" 16 mm Optical Sound-On-Film operation.



PORTABLE POWER SUPPLY UNIT—Model PS-21...Silent in operation, furnishes 115-Volt AC power to drive "Single System" or "Double System" Auricon Equipment from 12 Volt Storage Battery, for remote "location" filming.



DUAL PHONO-TURNTABLE—Model DPT-10...Takes up to 16 inch discs with individual Volume Controls for re-recording music and sound effects to 16 mm Sound-On-Film.



TRIPOD—Models FT-10 and FT-10S12... Pan-Tilt Head Professional Tripod for velvet-smooth action. Perfectly counter-balanced to prevent Camera "dumping."

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If it's profit you're after in the production of 16 mm Sound-On-Film Talking Pictures, Auricon Cameras provide ideal working tools for shooting profitable Television Newsreels, film commercials, inserts, and local candid-camera programming. Now you can get Lip-Synchronized Sound WITH your picture at NO additional film cost with Auricon 16 mm "Optical" Sound-On-Film Cameras. Precision designed and built to "take it." Strictly for Profit—Choose Auricon!

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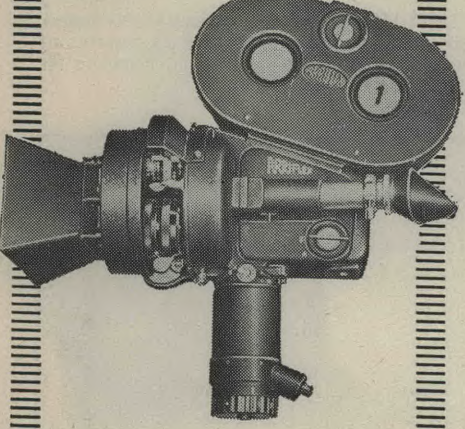

For tough and trying assignments, ARRIFLEX 35 is in a class by itself. Reflex focusing through photographing lens while camera is operating—this is just one outstanding ARRIFLEX feature.

Equipped with bright, right-side-up image finder, 6½ x magnification. Solves all parallax problems. 3 lens turret. Variable speed motor built into handle operates from lightweight battery. Tachometer registering from 0 to 50 frames per second. Compact, lightweight for either tripod or hand-held filming. Takes 200′ or 400′ magazine. Write for free folder.

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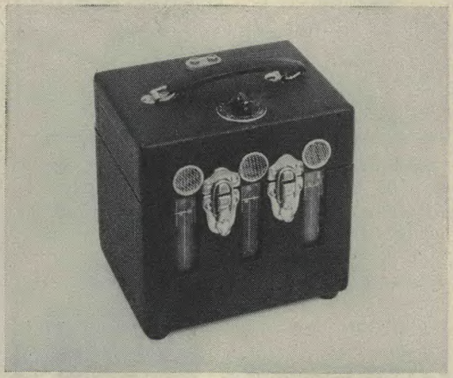
WHAT'S NEW

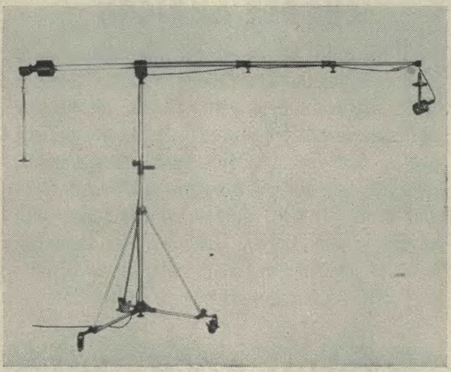
in equipment, accessories, service

Camera Battery Pack — Par Products Corp., 926 No. Citrus Ave., Hollywood 38, Calif., announces a new, lightweight DC storage battery pack for operation of motion picture cameras equipped with PAR 12-v. universal motor drives. Unit can also be used as a power source for other 12-v. camera motor drives.



Batteries are in a compact case, easy to carry and use. Other noteworthy features are: long life, ample power for speeds up to 64 fps, and a power selector which allows the motor to draw from the battery only the power required to operate the camera. This insures even discharge of battery cells. An integral charger unit is available at slight additional cost.

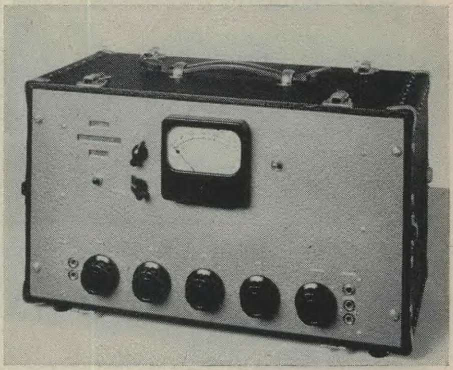
Portable Mike Boom — National Cine Equipment, Inc., 209 W. 48th St., New York, N. Y., announces a lightweight, collapsible portable microphone boom for studio and location work. Boom telescopes approximately 7 to 17 feet. A balance weight at rear is adjustable for extension of boom. Remote control permits operator to both adjust the boom and rotate the microphone. A control extension permits the same convenient operation even when boom stand is elevated to maximum height.



Other features include: oversize friction boom clutch; outside suspension of mike cable by clips; ¼-inch threaded microphone mounting rod; boom dolly is in two sections, having collapsible legs and ball-bearing wheels.

Improved Film Cement — The Kalart Co., Plainville, Conn., announces a new improved formula for its Craig Safety Film cement. Known as Formula #7, new cement will splice film regardless of type of base. It is fast drying, does not deteriorate, and excess cement is easier to clean from film surface. One-oz. bottle of the cement sells for 40c.

New Remote Mixer — Stancil Hoffman Corporation, 921 No. Highland Ave., Hollywood 38, Calif., offers a versatile remote sound mixer for motion picture and TV film production. To accommodate the various requirements of pre-amplification, the model AM-3 mixer uses small plug-in preamplifiers which are available in a wide range of impedances and gain. Four such pre-amps may be used. The unit is complete with AC power supply, announce microphone and talk-back, plus facilities for AC and DC operation. Additional data may be had by writing the company.



CEC Distributes Magnasync — Camera Equipment Company, 1600 Broadway, New York City, has been appointed regional distributor of the Magnasync synchronous magnetic film recorder, product of Magnasync, North Hollywood, Calif.

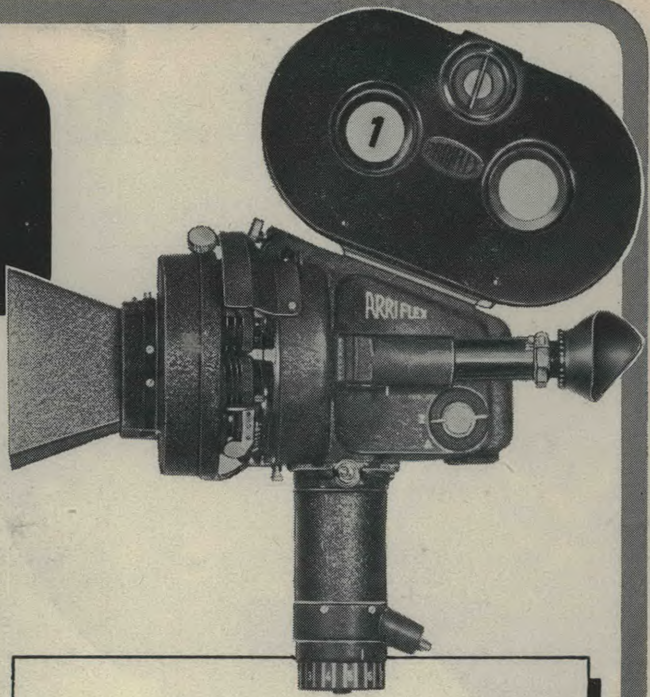
Recorder, noted for its low price of $1275, is available for use with 16mm dbl.-perforated film, 16mm single-perforated film, or 17½mm film.

Maximum portability, extreme light

(Continued on Page 89)

☆ ARRIFLEX 35

MODEL II



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writes WILLIAM H. CLOTHIER, ASC

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We have learned to depend upon the Arriflex 35, because it has demonstrated the quality to meet the high standards set by Hollywood cameramen throughout the industry."

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JOSEPH LASHELLE, ASC, one of 20th Century-Fox's ace cinematographers, displays in "My Cousin Rachel" his finest camera work since "Laura," for which he won an Academy Award in 1944.

Artful photography enhances the mood and character of . . .

'MY COUSIN RACHEL'

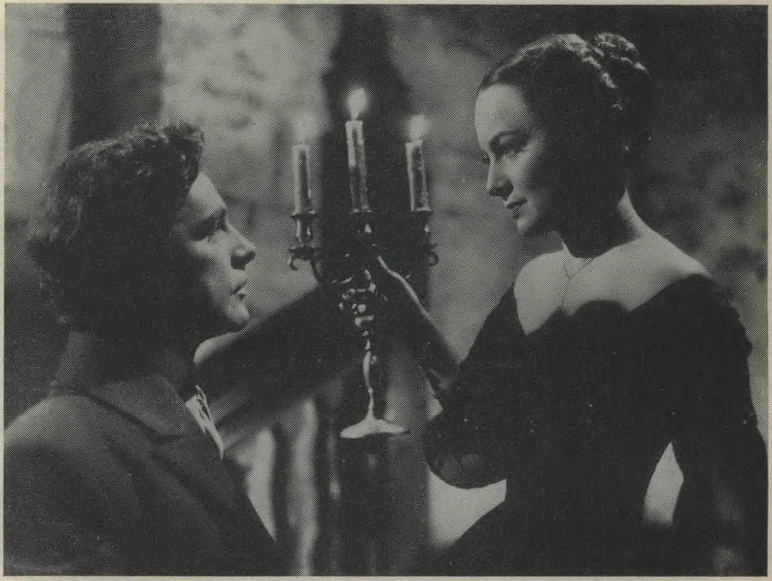
By HERB A. LIGHTMAN

FOR SHEER PHOTOGRAPHIC artistry "My Cousin Rachel," produced by 20th Century-Fox, represents Hollywood craftsmanship at its best. It is no mere glossy bit of technique, but a visually forceful portrayal of a dramatic story which takes place on the rugged coast of Cornwall around 1840. Cinematographer La Shelle and Director Henry Koster, working in smooth harmony, have created so strikingly honest an atmosphere of time and place pictorially that it smacks not at all of the "back lot," as so many period films unfortunately do.

"Rachel" is primarily a film of mood and character—the story of a young man (played by dynamic British newcomer Richard Burton), seduced by a beautiful widow who is half-saint and half-devil (both halves played to the hilt by two-time Oscar-winner Olivia de Haviland). Frying in the deep fat of passion, he gives her his entire fortune—then, in a fury of unrequited love, leads her to her death. We last see him brooding by the sea, still wondering whether she actually was an angel or Evil incarnate.

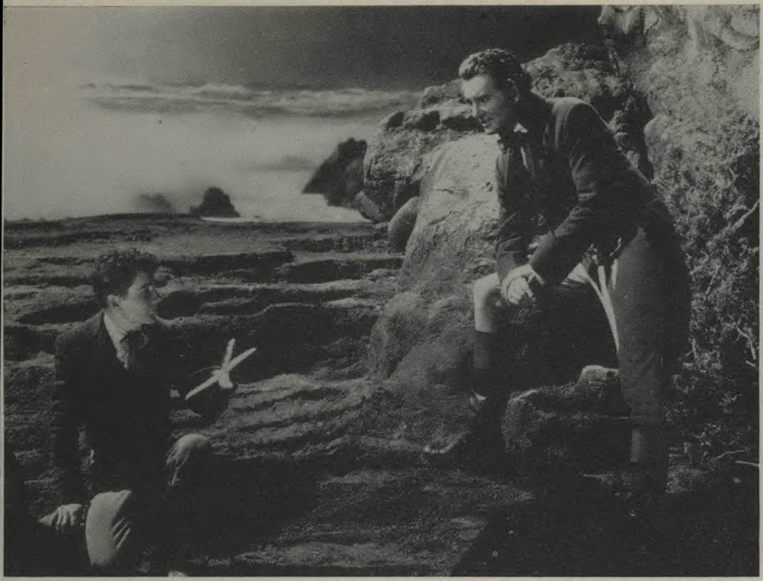
The force of this off-beat dramatic story stems not only from superior direction and top-notch performances, but from the violent, brooding atmosphere of the wild Cornwall coast as re-created by artful lighting and outstanding camerawork. This atmosphere pervades not only the exterior scenes, but the interiors filmed within the walls of the studio-built Cornish castle, as well. The visual treatment is all of a piece, and it rings true in every frame.

The authentic 17th Century Cornwall castle, designed by art directors Lyle Wheeler and John de Cuir, occupied nearly all of Stage 14 on the Fox lot. It was unique for Hollywood in that it was completely functional and continuous instead of being roofless and disjointed as most sets are. The camera could pick up people arriving by horse-drawn carriage at the front door, take them inside, downstairs and out to the rear gardens in one continuous action. Made of stone with a slate roof, it contained leaded windows, rare Flemish tapestries, knights' shields and weapons, huge stone fireplaces, candelabra and authentic antique furniture of the period. In addition, it featured interesting nooks and crannies, surfaces and textures that are a cameraman's delight.

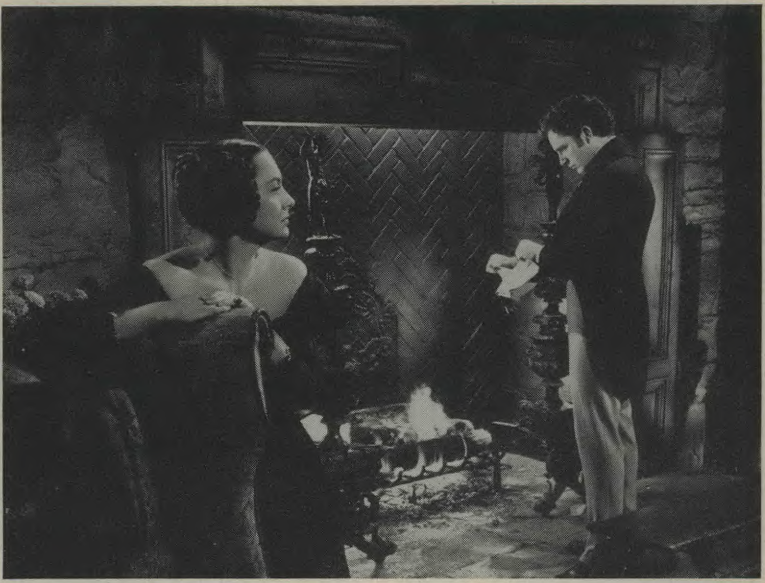


PARTICULARLY realistic is the lighting of scenes in which candles are shown as only source of illumination. LaShelle had assistants play small spotlights on players and walls as they moved through the scene.

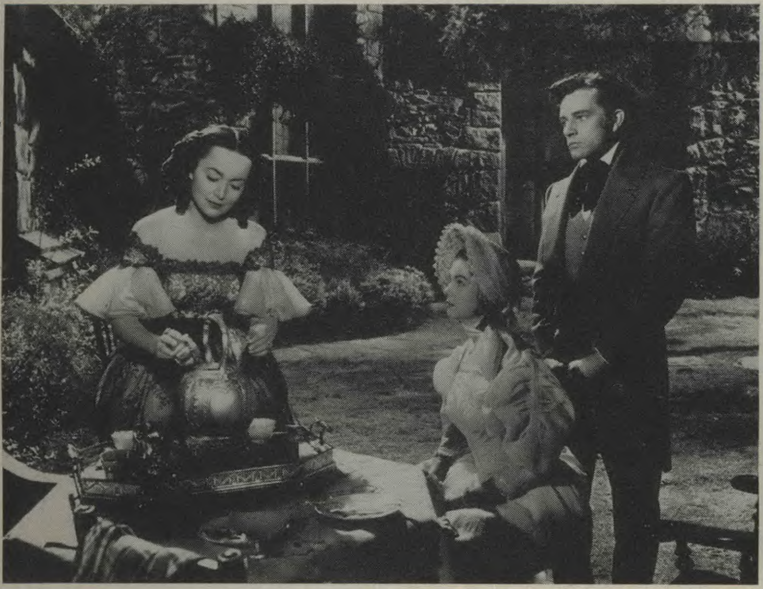
Establishing long shots of the exterior locales were actually filmed in Cornwall by a second-unit crew. Fortunately, leading man Burton was in England at the time and available to be photographed in these scenes. The closer tie-in shots, however, were filmed in the studio quite some time later, mostly in front of the process screen. La Shelle had noted



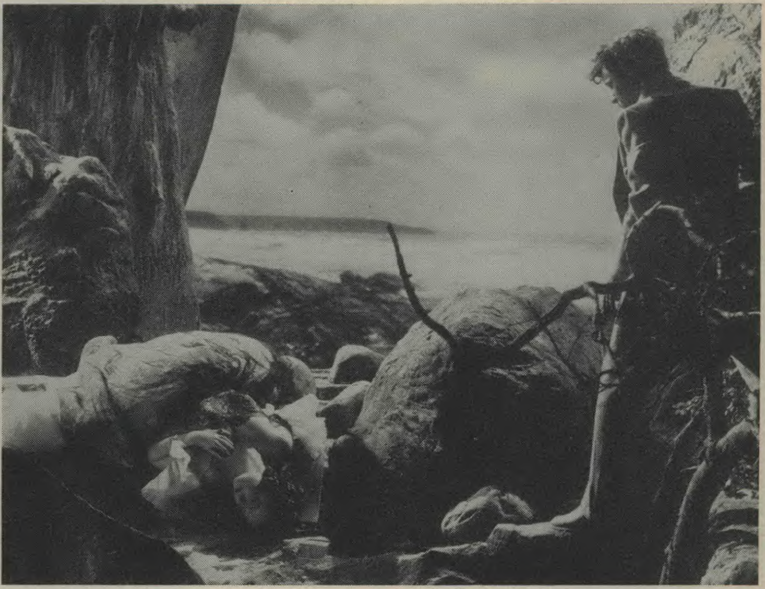
SCENE IN OPENING sequence of picture in which LaShelle demonstrates the fine technique of matching the lighting of indoor "exterior" sets with that of background plates (of sea and surf) used to backdrop the scene.



FEW PICTURES display the meticulous care given to lighting of individual players. LaShelle's lighting definitely enhances the entire performance of Miss Olivia DeHavilland, star of the production.



HERE careful lighting points up the architectural highilghts of the scene without detracting from the players, at the same time maintaining the "old world" mood of the story as Miss DeHavilland pours tea for her guests.



AGAIN, in the closing sequence, background plates are skillfully used to provide background for this indoor exterior scene, showing Miss DeHavilland dying on rocks following her fall from a rickety bridge.

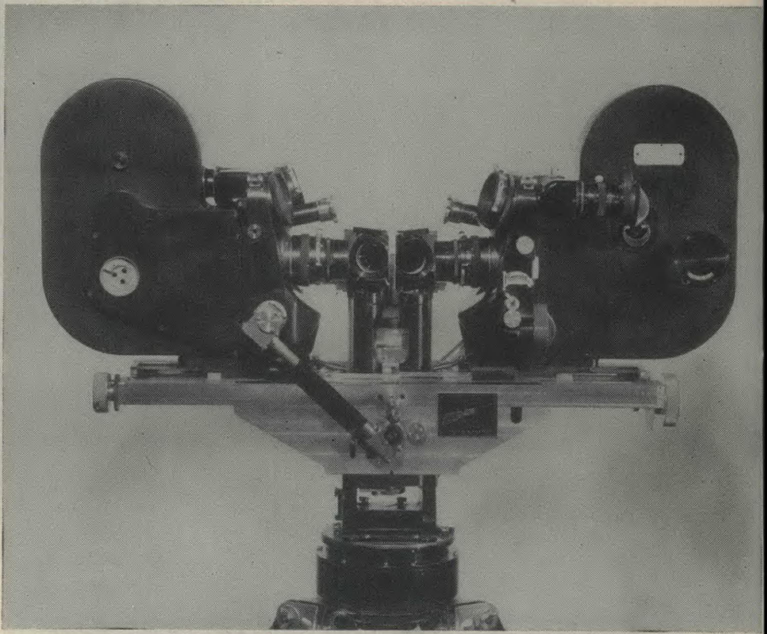
that in all of the establishing shots sent back from Cornwall, a strong wind was in evidence—so he carefully duplicated this effect in his process scenes through the use of wind machines. The result is a perfect match between the real thing and the studio product.

In the film there are several sequences in which characters are seen walking down the somber corridors of the castle carrying lighted candles. It had to be apparent in these scenes that the candle was the only source of illumination, an effect which is usually not very convincing on the screen. La Shelle armed three assistants with small portable spotlights, and trained them to move precisely with the actor as he walked. One man cast light on the actor, while the other two trained their spotlights on the walls next to and behind him—producing a glow as uniform as that given off by an actual candle. It took a bit of practice before the assistants could synchronize their movements exactly to those of the actor (especially when he was ascending a winding stairway), and it was also not easy for them to stay out of camera range while doing so—but the final result is perfect.

In another sequence, the director of photography used his technical ingenuity to put across an important dramatic subtlety that actually might have proved censorable had it been portrayed with less skill and good taste. It seems that in this film the first kiss of the two main characters is no mere celluloid osculation calculated to leave the audience limp with vicarious ecstacy. Rather, it represents *the* important turning point in their man-woman relationship, a dramatic milestone which completely alters their previously

(Continued on Page 86)

KARL STRUSS, ASC, (left) and camera crew film a scene for Sol Lesser's initial 3-D color film at RKO-Pathe studios, using Stereo-Cine Corp's. camera equipment. Struss, pioneer cinematographer, is an expert on three-dimension photography.



STEREO-CINE CORP'S. initial 3-D camera equipment is built around two Eclair 35mm Camerettes, which pick up image from dual reflecting mirrors (center). Refinement claimed for equipment is the variable interocular in addition to micrometer parallax adjustment of mirrors. Company also is building additional 3-D units, one employing Mitchell BNC cameras, similarly mounted.

Stereo-Cine Corporation Is Newest 3-D Filming Organization

Sol Lesser first to use company's new 3-D camera equipment which utilizes Eclair 35mm Camerettes. Karl Struss, ASC, directs the photography.

By ARTHUR ROWAN

UTILIZING THE 3-DIMENSION camera equipment of the Stereo-Cine Corporation, producer Sol Lesser, on January 9th, began production of his first stereo theatrical film in color at RKO-Pathe studios, with Karl Struss, ASC, directing the photography. The event marked the second independent 3-D film production company to get under way in Hollywood during the past twelve months; the first was Arch Oboler, who last summer filmed "Bwana Devil," utilizing another company's 3-D camera equipment.

Stereo-Cine Corporation, the newest Hollywood company to make available 3-D camera equipment to film producers, is headed by Raphael G. Wolff, whose business film studio under the same name is one of the best known in the industry, and Sol Lesser who joined with Wolff in forming the company following Wolff's extensive development of camera equipment and 3-D filming techniques. The company is a service organization set up to provide the camera equipment, technicians and consultation to film producers interested in making motion pictures in 3-dimension. The company itself produces no pictures. However, Lesser independently will, and has several productions in the planning stage to follow his present 3-D effort.

Stereo-Cine's 3-D camera equipment resembles in arrangement the dual cameras used by Milton Gunzberg's Natural Vision Corporation, and those of the English company which produced the stereo films which were exhibited at the Festival of Britain.

Stereo-Cine Corporation's first 3-D camera equipment, for reasons of economy and a desire to cut down weight, is built around two French-made Eclair 35mm Camerettes. These cameras are mounted on a specially designed base, as illustrated above, upon which they can be moved back and forth (toward and away) from the dual reflecting mirrors in order to vary the interocular. As with other 3-D apparatus of this type, the mirrors are precision mounted on specially designed bases, and their angle may be varied by means of micrometer adjustment.

The important refinement claimed for the Stereo Cine Corporation's camera equipment, and which reportedly is not found in other similar equipment, is the variable interocular, which it is frequently necessary to employ in order that the photographed result will have no adverse effect on eyes of the audience.

Many variations of this equipment

(Continued on Page 78)

Q.

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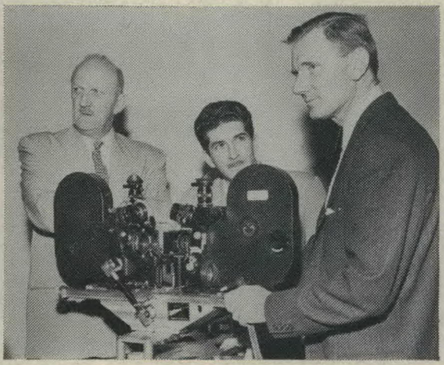
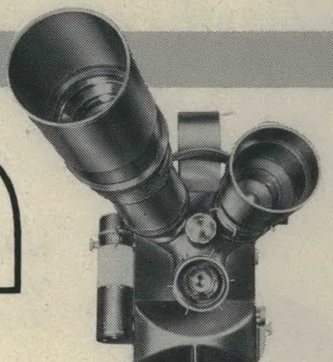


Raphael G. Wolff, president of Stereo-Cine, Inc., with stereo technicians Henry Ludwin and Vee Bodrero and two Camerettes in Stereo-Cine mount for three dimensional photography.



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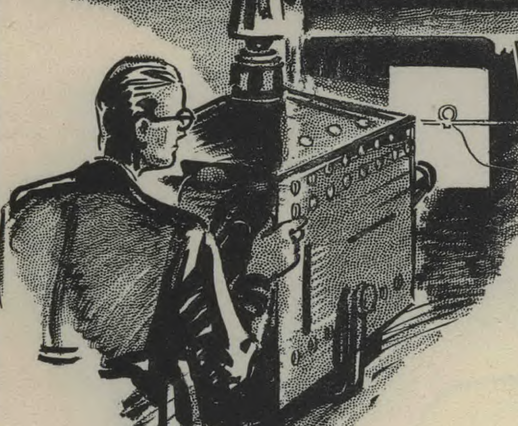

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INTELLIGENT camera movement is the result of close, careful preplanning between the cameraman and the director. Here cinematographer Harry Jackson's camera crew execute a moving crane shot on location in Argentina for 20th Century-Fox's "Way of A Gaucho."

THE MOBILE camera is used prominently in the production of "westerns," especially in filming "chase" sequences—dramatic high point of most outdoor dramas. The camera cars are extremely rugged, and often mount three different cameras to provide ample angle shots of the action.

'Fluid' Camera Gives Dramatic Emphasis To Cinematography

Correctly used, the mobile camera produces fluid continuity—a smooth-flowing interplay of changing compositions within the individual scene.

By HERB A. LIGHTMAN

A SOUND PSYCHOLOGY underlies the use of the mobile camera. Movement purely for the sake of movement is an abuse of an otherwise forceful technique. The intelligent director or cinematographer moves the camera only when the demands of the filmic situation motivate that movement. Correctly used, the mobile camera produces a fluid continuity—a smoothly-flowing interplay of changing compositions within the individual scene. These compositions change and vary from extreme long shots to extreme closeups without the harshness of a direct cut. Thus the audience's attention is held without mechanical interruption to the subject-matter of the scene.

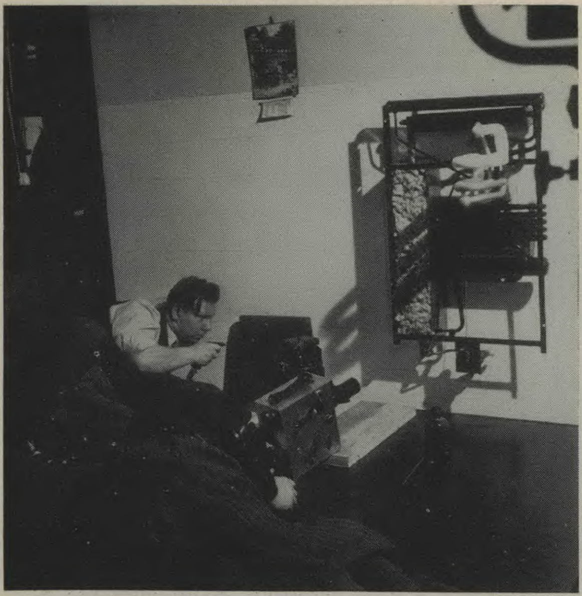
There are several types of camera movement, and each device has come to be known by a specific name. The *follow shot* is one of the most common techniques and, as the name implies, it is used to follow the action of one or more characters within the scene. Usually this is accomplished by a simple tilt or pan or a combination of the two. Frequently, however, it becomes necessary for the camera to follow a player over a wide stretch of terrain. When this is the case, the camera is mounted on a dolly or camera boom and we have what is known as a *trucking shot* in which the camera actually follows right along with the subject in his course of action.

In this type of shot the camera's motivation for movement is usually pretty well established, since it depends upon and is keyed to the movement of one of the players. The effect to be desired, as in all types of camera movement, is smoothness—since a jerky pattern of movement would detract more from the scene than it would add. If the camera glides smoothly along, the audience will not be consciously aware of the movement in itself.

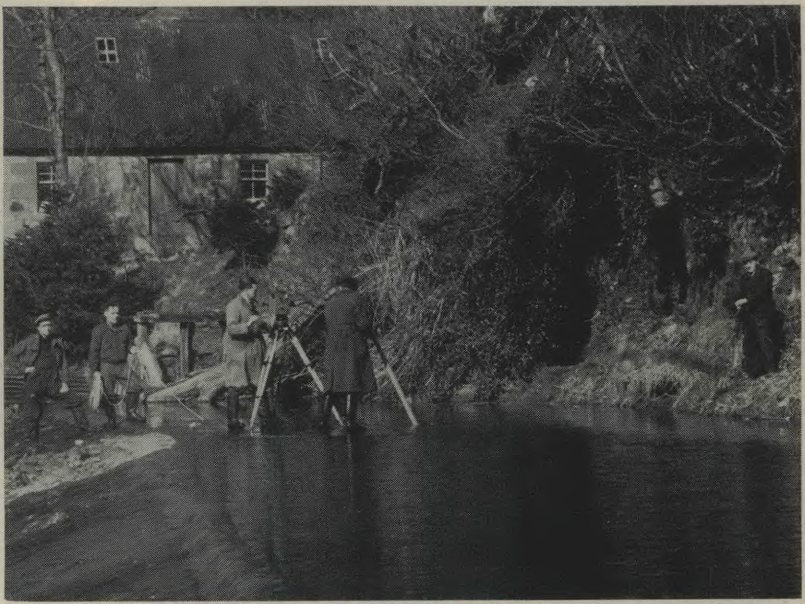
Another type of moving camera shot is the *pull-back*, in which the scene opens with a close-up, the camera later pulling back to present a much wider angle of the scene. This device is used where it is first necessary to focus the audience's attention on a certain small detail of the scene, later broadening the angle to show the context in which that detail is mounted.

In the film, "The Lost Weekend," photographed with superb realism by John Seitz, ASC, there was one memorable scene of this type that opened with a striking super closeup of the main character's eye as it fluttered open, bloodshot and bleary, the eye of a drunkard. The camera then pulled back to a medium long shot of the character as he awakened from his stupor and began to stumble about the room. In this shot, the closeup of the eye was the keynote of the scene. It set the psychological mood; it focussed the audience's attention by filling the screen with a small but vital detail of the character's state of being. The initial impression

(Continued on Page 76)



WHEN FILMING the very small gas flame used in a refrigerator unit, a solution of salt water was used to increase actinic value of the flame. Agitating the flame with a fine jet of air from a small compressor gave additional pictorial interest to the detail.



AUTHOR and camera crew used home made raft on which to mount camera for a dolly shot of inventor's historic cave. Assistants on either side of stream pulled raft through water by means of ropes.

Filming A Documentary Of The Gas Industry

Getting a clear image of a gas flame on film was just one of many problems encountered in filming history of illuminating gas industry.

By JOHN R. F. STEWART, A.R.P.S., M.B.K.S.

COMMISSIONED by the Gas Council of Great Britain to make a 25-minute documentary about the history and present-day uses of coal gas, I soon discarded the old advice on story telling—"Start at the beginning, go on to the end, and then stop!"

There were a score of beginnings, the story covered hundreds of years, and there is certainly no end in sight yet.

But eventually, from the vast amount of material available, it was decided for the historical sequences to concentrate mainly on the story of William Murdoch, 18th century Scots inventor, and one of the first men to light a house with gas.

But in a film which combines historical episodes, played by actors, with documentary sequences filmed in factories and laboratories, it is important that the historical incidents should have the utmost realism.

Extensive research was undertaken to insure that props, clothes, sets, etc., were correct for each period. Museums were searched for equipment, gas apparatus and tools which might actually have been used by Murdoch or his contemporaries. Some scenes in the film, showing Murdoch experimenting with a model steam locomotive, were shot in the actual lane—at Redruth, Cornwall—where the incident really took place, one hundred and sixty eight years ago.

The original engine exists today, and for the film an exact replica was made with one difference: a concealed electric motor, worked from a miniature hearing-aid battery provided the power; the "steam" was produced by smoke pellets in the funnel.

To help convince audiences still further that the scenes from the past are not fiction, but the reconstruction of historical fact, the film starts in the present day, at the cottage in Scotland where William Murdoch was born.

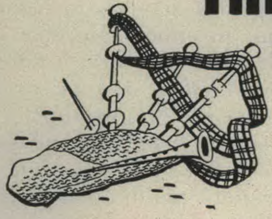
Yes, the cottage still stands today but altered and modernized and with an *electric*, not a gas, range in the kitchen.

We filmed a plaque on the wall, commemorating Murdoch's birthplace, and a nearby cave, hewn out of rock, where Murdoch played as a boy. In those days the cave was easily approached from the bank, but through the years the path has crumbled away; so to get the shots, a raft was built for the camera and floated on the mill pond. Sunlight, reflected from the water on to the walls of the cave, helped to improve the pictorial value of the scene.

These scenes—of things which actually exist today—help greatly to assure an audience that the 18th century scenes in our film are also true, but a smooth and convincing transition to the past is essential.

After the cottage and cave is pictured,

(Continued on Page 81)



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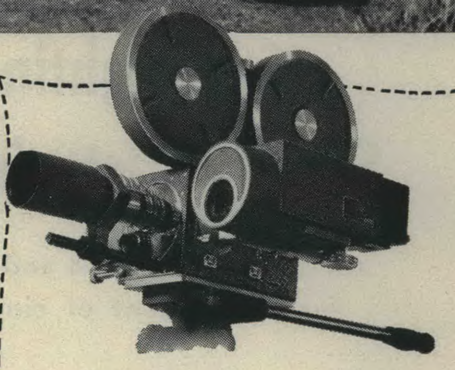

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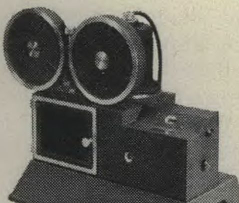

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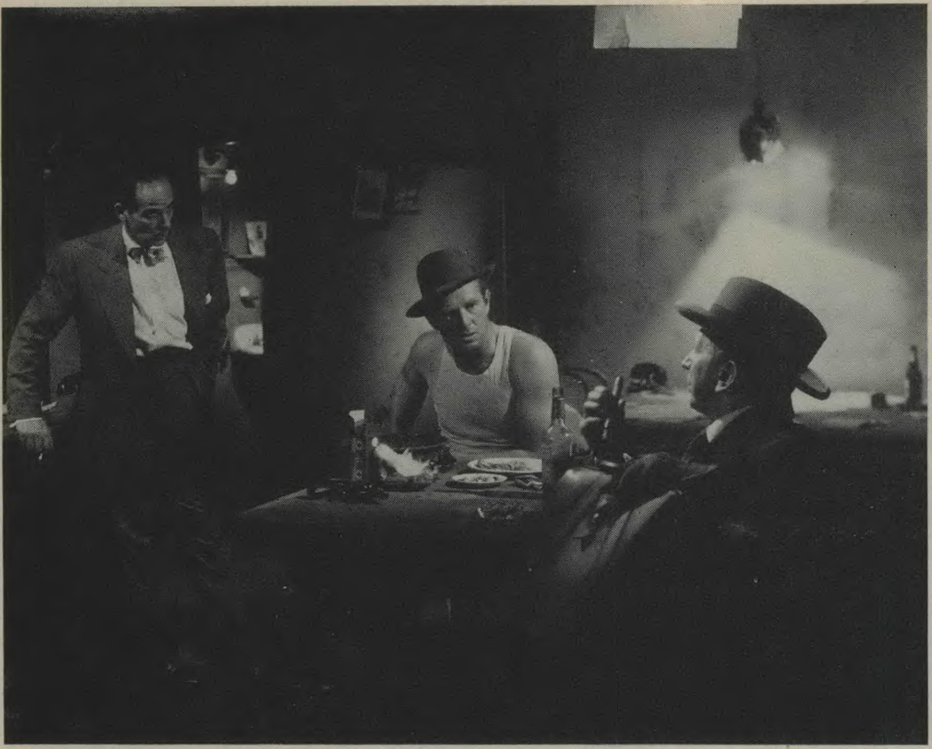

LOW-KEY lighting, characterized by softly lit highlights, and shadows which fall off into dense black, is especially effective when used in sequences dealing with crime.

Set Lighting For Special Pictorial Effects

An analysis of mood and effect lighting for the student of cinematography.

By CHARLES LORING

MOOD LIGHTING, which functions to create a psychological setting for the audience's imagination, must only be used in sequences where the dramatic structure calls for such treatment. To force it into a sequence which does not warrant so forceful a technique is to create a much-ado-about-nothing impression in the minds of the audience.

As in any other kind of set illumination, mood lighting must remain consistent with source. It is true that the source may be relatively small, such as a candle, oil lamp or an open fireplace—but the cinematographer must first ask himself: "From where is the light coming?" Once having established this basis, he can slant his lighting pattern toward it.

Many non-professional cinematographers become baffled when attempting this sort of lighting, because they walk onto the set and start arranging lights in accordance with a purely mental idea they may have of the desired effect. It is much more efficient to set up the actual situation, if possible, noticing the way the light falls, and then duplicating as closely as possible the highlight and shadow relationship in terms of artificial illumination. In order to reproduce the effect of candlelight, for instance, light a candle on the set and study the effect it creates.

As in any other phase of film production, special effect lighting should not call attention to itself. The moment the audience begins to pay attention to the lighting instead of the dramatic content of the scene, something will be lost from the effect of the film.

Low-key lighting, characterized by softly lit highlights, and shadows which fall off into dense black, is especially effective when used in sequences dealing with crime, mystery and (paradoxically enough) love. Any dramatic situation in which human emotions are portrayed as "boiling about inside," can usually be helped by low-key.

To be truly effective, a low-key set-up should be arranged in such a way as to point up the main areas of action and play everything else down. This, of course, calls for pre-planning—therefore, the final lighting scheme should not be definitely set until the pattern of action in that sequence has been worked out.

Genuine low-key is usually lit rather softly, harsh black and white contrast being avoided. On the other hand, it does not do to use heavy fill light, as the low-key effect will then turn into a wishy-washy overall gray pattern.

In lighting low-key, the highlight areas are given normal light levels, while the shadow areas are allowed to fall off sharply. There are two schools of thought regarding the exposure of this kind of set-up. Some cinematographers advocate slight underexposure and normal printing. Others advise normal exposure, with the negative later being printed down for a darker effect. The latter theory seems to give the most favorable result, since in this way a greater amount of shadow detail is included on the film—but, in either case, one must be sure to let the laboratory technicians know the exact effect desired, or they may over-compensate in printing.

Another style of lighting having a predominance of shadow area, but with a more dynamic quality than straight low-key, is that which is known as out-of-balance lighting. This type is characterized by harsh contrast between crystal white and velvet black, with very few intermediate gray tones.

Although somewhat radical in effect, out-of-balance lighting is extremely dynamic and is especially adaptable to violent action or dramatic themes. Its stark light and shade patterns are not always flattering to feminine players, but the realistic effect it produces is very suitable for down-to-earth dramatic or documentary subjects.

The effect is achieved through the use of simple, brilliant light sources with little or no full illumination. In its more extreme forms, arcs are used to good advantage. The style differs from straight low-key in that it is much harsher in contrast and utilizes more brilliant key-light. For this reason, the "glamour" shots which are so effective in softly

(Continued on Page 77)

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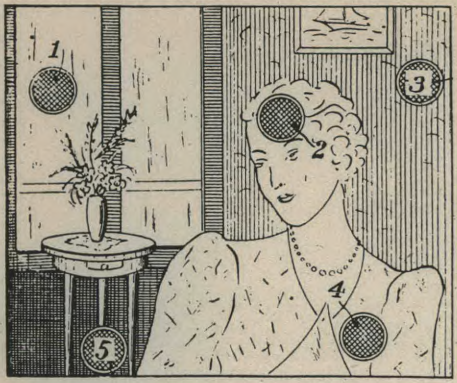

FIG. 1—Image as seen in camera finder system, at point 15 in Fig. 3 at right. The photo-cell on prober (Fig. 2) is moved over area to make readings at 1, 2, 3, 4, and 5.

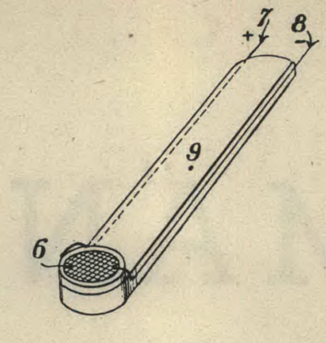

FIG. 2—Probe of the sensitometry system has small photo-cell at one end (6). Wires (7 and 8) lead to galvanometer dial, from which exposures are computed.

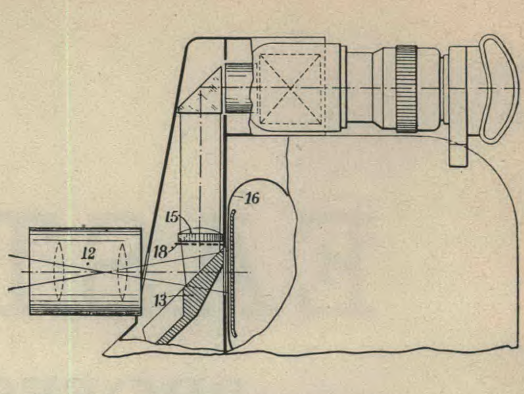

FIG. 3—Cross section of Eclair Camerette reflex shutter-finder system. Prober operates in front of ground glass indicated at 15, to read exposures of various points of scene.

A Built-in Exposure Calculator For Motion Picture Cameras

Novel sensitometry system reads light values selectively over sections of image area as seen in finder ground-glass.

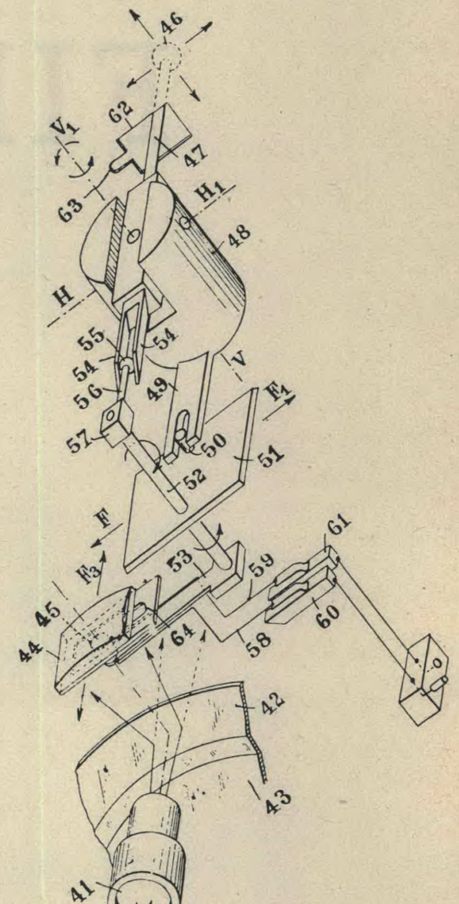

FIG. 4—Exploded view of Coutant's sensitometry system for motion picture cameras, which is fully explained in the accompanying article.

A French engineer and inventor, A. C. Coutant, has developed a new system of determining correct exposure for cinematography by means of a sensitometry system built into the camera itself. The invention was illustrated and described in an article appearing in the July, 1952, issue of *La Technique Cinematographique,* published in France.

Until recently, such a method of exposure calculation has been attempted only with certain cine cameras manufactured in Europe. Coutant's invention has initially been adapted to the Eclair Camerette (also known as the Cameflex), a camera ideally suited to the method by reason of its through-the-lens reflex viewfinder system.

In describing his invention, Coutant states: "It is customary for the director of photography to use a photo-cell exposure meter to measure the light of the scene to be photographed. The information given by such an instrument is only approximate, because the intervals of light reflected by a scene or subject vary from one point to another in the picture area, often in rather large proportions, so that the measurement obtained by the meter is but an average of several direct readings.

"When dealing with cinematography on the sound stage, the cameraman is obliged to take several meter readings of the light coming from the various set lighting sources and determine the working average.

"Still another factor that deserves consideration is the way certain objects or subjects have variable reflecting qualities, depending on the colors, the brightness, diffusive quality, etc. Light may also vary with the weather and with the positions of either the subject or the camera.

"Previously, efforts have been made to obtain exposure meter readings by placing a photoelectric cell immediately behind a translucent glass situated at the focal plane of the lens, but measurements thus obtained represented only the average of the overall light transmission as reflected from the scene. Moreover, such measurements could not discriminate between the dazzling highlight areas of the subject with their tendencies to overexpose the film, and the shadow areas incapable of making an impression on the emulsion.

"The invention described here has as its object a means of measuring exactly the luminosity of all the points of the scene to be photographed, by exploring selectively, with a sensitometric probe, the whole image at a point within the optical system, as illustrated in the accompanying diagrams. This probing can be done with the aid of very small photo-cells; and the smaller the size of the cell, the smaller the sections of the picture area that can be measured.

"In short, what this method does is to permit the cameraman to obtain selective sectional readings of the overall

(Continued on Page 84)

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What The Cine Photographer Should Know About Hyperfocal Distance*

By JOSEPH WALKER, A.S.C.

CORRECT FOCUS is an absolute essential to good photography. In some types of amateur and documentary filming, minor errors in exposure, composition and lighting may at times be considered forgivable. But unless a scene is in good focus, it's of no use to either the professional or the amateur.

The professional cinematographer, of course, has a double check on his focus. First, he is able to study the actual image, right-side-up and highly magnified on a ground glass focusing screen. In addition, it is standard practice to measure the distance from the camera to subject with a tape-measure before every shot, and set the lens accordingly.

But the amateur cinematographer doesn't enjoy these advantages. Only a few 16mm or 8mm cameras permit any sort of ground glass focusing, and only a very few of these give the ground glass image magnification great enough and critical enough to permit absolutely precise focusing. Only a very few of the more careful-minded amateurs take the trouble to work, professional-wise, running a tape before each scene. And while an interconnected rangefinder would be invaluable in substandard camerawork, thus far only one amateur camera so equipped has appeared on the market. So focus remains headache No. 1 for the 8mm and 16mm moviemaker.

To some extent, the extreme focal depth of the short-focus lenses generally used on 16mm and 8mm cameras can cover up minor errors in focusing. But not always—as most users of focusing-mount substandard cameras can testify from sad experience! And even in 8mm, a scene where you'd guessed wrong in adjusting the lens of a focusing-mount camera is usually a good deal worse than what you'd have gotten under the same circumstances with a simpler, fixed-focus lens.

The answer is that the manufacturer of the cheaper, non-focusing lens has taken advantage of a very useful little optical fact and mounted the lens so that it is permanently focused at what is called its hyperfocal setting. You can make this same optical fact work even better if you have lenses in focusing mounts. Especially when you're working under pressure, making scenes of the "grab-it-quick" type, where you want to minimize fiddling with and thinking about basic camera mechanics, you can often set a lens at its hyperfocal setting and then forget focus, confident that (at least on most normal shots) everything important in your picture will be in adequately sharp focus. But to do this you've got to know what the hyperfocal distance is, and how to put it to work.

As a matter of fact, the hyperfocal distance is a double-action affair. First of all, it is the distance at and beyond which all objects are in focus when sharp focus is secured at infinity. But also—and perhaps more important—if you focus the lens *at* the hyperfocal distance, everything from one half that distance from the camera to infinity will be sharply defined. If, for instance, the hyperfocal distance were 25 feet, everything from that point on to infinity would be adequately sharp with the lens at infinity focus, while if the lens were placed at the hyperfocal setting of 25 feet, everything from 12½ feet to infinity would be adequately sharp.

The hyperfocal point is dependent upon three factors: the focal length of the lens, the aperture used (expressed as an *f*-stop) and the circle of confusion.

The term "circle of confusion" refers to the diameter of the lens' image of any given point in the subject. Theoretically, if lenses could be made perfect, the image of a point would also be a point. But in practice, not even the finest of lenses can bring the images of all wave-lengths or colors of light to a focus so precisely in the same plane that the image of a point will be a true point. Instead, some wave-lengths will come to a focus on the plane of the film, while others will be focused microscopically behind or in front of it, in either case giving an image on the film slightly larger than the actual point. The practical result is that the image of the point is reproduced as a circle, rather than as a point. Maybe it is microscopically small, but it is still mathematically measurable as a circle instead of a point.

The size of this circle of confusion therefore becomes one of the chief governing factors in the matter of image definition. Speaking generally, the finer a lens, the smaller the diameter of its circle of confusion. In the same way, if a lens is to be used for work that is not too exacting, you can base your hyperfocal and depth of field calculations on a circle of confusion considerably larger than is necessary in a lens to be

(Continued on Page 82)

HYPERFOCAL DISTANCES

	FOCAL LENGTH OF LENS.					
	12½mm.	15mm.	25mm.	1½-inch.	2-inch.	3-inch.
Stop.	HYPERFOCAL DISTANCE IN FEET					
f: 1.8	11¼	16	46¼	104	185	417
2.5	8	11¼	33½	75	133	300
3.5	5¾	8	23¾	53½	95¼	214
4.	5	7	20¾	46¾	83	187
4.5	4½	6¼	18½	41¾	74	167
5.6	3½	5	14¾	33½	60	134
6.3	3¼	4½	13½	29¾	53	119
8	2½	3½	10¾	23½	42	94
11	1¾	2½	7½	17	30	68
16	15½″	1¾	5¼	11¾	21	47

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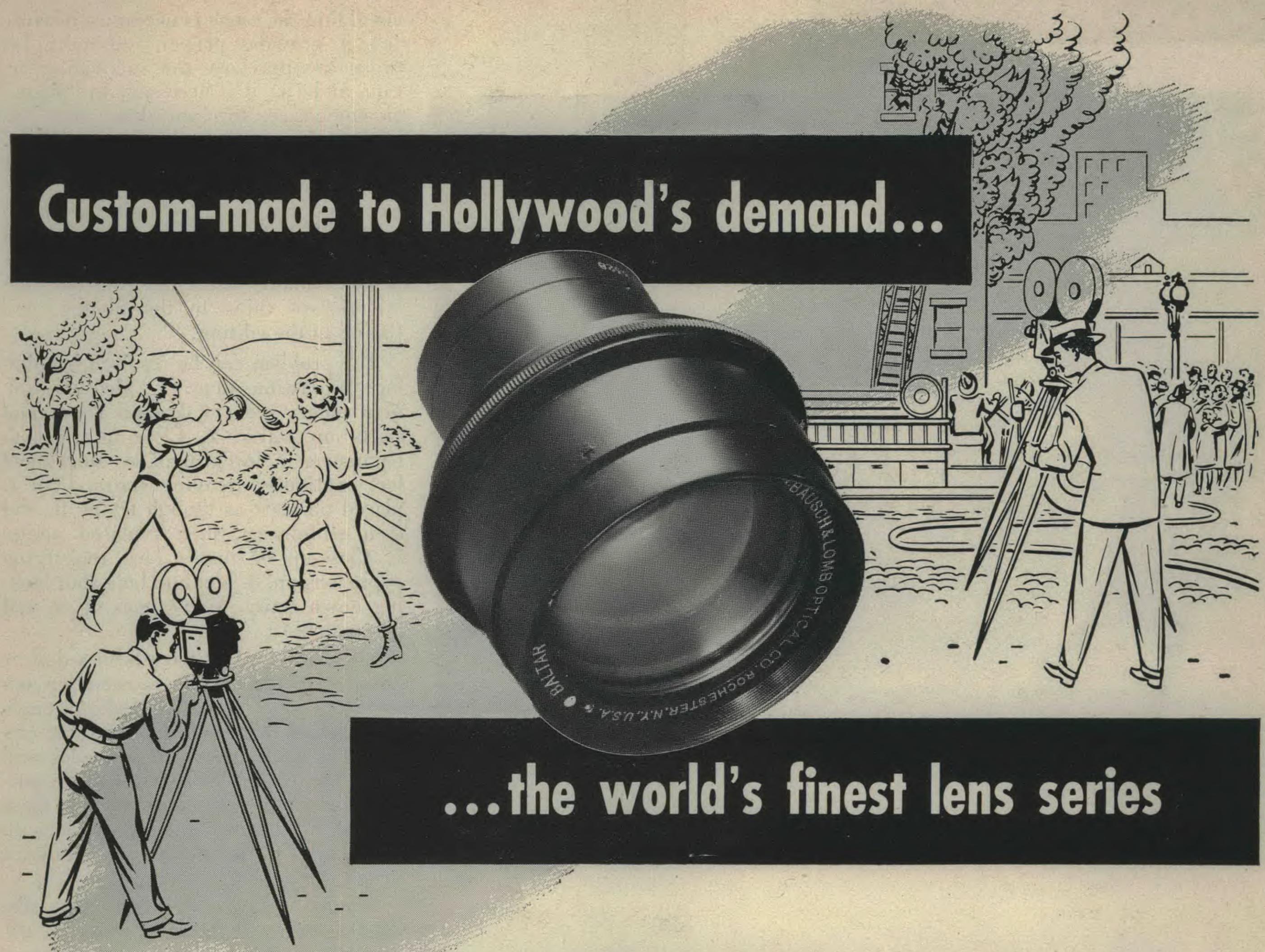
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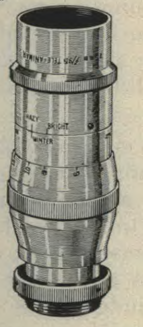

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WRITING a script for an 8mm or 16mm motion picture is a matter of planning, in more or less detail, what is to be filmed and how. The "what" is determined by the subject of the picture but the "how" is, within certain limits, the responsibility of the cameraman. And this quite apart from whether the photography is adequate or even good from a purely elementary, functional viewpoint.

A motion picture is a story told through a pictorial medium. The pictures, or scenes, that are parts of the film as a whole should each have the eye-arresting appeal that marks the work of the graphic artist, plus the interpretive quality necessary to sustain interest at a maximum and unfold the story expertly. And that's where the script comes in. By planning even the most seemingly unimportant inserts, due consideration should be given to the emphasis they will put in the sequence as a whole—emphasis pictorially or dramatically.

To take a clinical case let us suppose that a story calls for a scene which shows a man climbing a flight of stairs. We want to get over the fact that the man is being most cautious not to be heard. We also want to get over the fact that the stairs creak.

When the script is written it is decided that the scene is necessary because (a) it provides proper continuity between the previous and succeeding action, and (b) it is necessary to "plant," or emphasize, the squeaking stair for proper motivation in the next sequence. It is also realized, however, that the scene is of secondary importance to the story and that the opportunity for action or "business" is limited to the extent that the interest might lag if the scene is not handled with due conisderation for picture value in the filming, and timing in the editing.

The problem can be resolved by filming the action thus: 1. Medium-shot. Man enters scene, takes off shoes and starts up stairs. 2. Close-up, through bannisters in foreground, of stockinged feet cautiously treading stairs. Foot is placed on stair as though trying it, and then withdrawn, then replaced again. 3. Close-up of man's face registering apprehension. 4. Medium long-shot looking down stairs. Man comes up to and past camera.

Thus, what might have been a dull or uninteresting sequence becomes an opportunity for some appealing angle shots which help "sell" the picture; emphasis is placed where it is needed and when the film is edited it will be possible to cut this sequence so that there will be a sufficient variety of shots to eliminate the possibility of "interest drag."

Another great advantage that the cineamateur will discover when he undertakes to shoot is the greater opportunity he will have for using his versatility as a cameraman. As a consequence his pictures as a whole will possess more photographic variety and charm as well as added lucidity and punch in telling their stories. By doing no more, for instance, than to plan the use of varying angles at which to shoot certain scenes will, quite often, lift a reel out of the ordinary.

It is sometimes surprising how easy it is to be monotonous photographically. Scenes that from an action viewpoint have every reason to be stimulating frequently suffer because they have a photographic sameness as endless previous scenes. And in judging the interest-sustaining qualities of a given bit of action, the experience or opinion of a mere spectator is worthless. Things just don't react the same from the screen.

An interesting example is illustrated by two films made of the same event recently by two different cinefilmers of the right and wrong way to make an amateur film. Unknown to each other two camera enthusiasts had turned out to film a rodeo. Both men got almost exactly the same material. Both reels were photographically excellent as far as exposures and camera handling were concerned, but there the similarity ended.

One man turned in something that was tedious to sit through and failed in every way to convey the excitement and drama of the rodeo or do justice to the subject-matter. He made the mistake of shooting everything from a monotonous eye-level with the result that all the vitality of his subject was strained out. When he edited the film he hadn't a chance. And even the technically excellent follow-shots he made with his telephoto lens hardly helped to dispel the sense of sameness that pervaded scene after scene.

The other man opened with the same parade and filmed the same events. But with what amazingly different results! First, he filmed general rodeo atmosphere stuff. Then, instead of filming entry after entry in the same events, he took time out to think up a few ideas and made some notes. In effect he wrote a script. Simple and unassuming, but sufficient for the purpose.

Reviewing the list of scenes he had already made, and cutting the film in his mind's eye, he made a list of shots he would take. And they were the scenes that made the picture, that lifted it out of the class of stuff that the average cineamateur makes, and turned what might have been just another photographic record of a sporting event into a short-subject that would have been a welcome addition to any theatrical program.

He made human interest shots of small boys standing in open-mouthed admiration; he made another memorable shot of a rather sedate woman trying to catch in her mouth the dripping mustard from a hot-dog; and reaction shots of spectators in a whole block of seats rising to their feet, tense with excitement.

Lucky? Yes . . . in a way: he wasn't looking for just those shots but he *was* looking for characteristic atmosphere and crowd shots, was on the alert for them—and he got them. Then there were closeups of a bronc's head tugging against the restraining hands behind the gate; of pawing hoofs; of steers and lariats. The cowboys sitting on the corral fence were recorded, too, in both long-shot and closeups. So were the silver-mounted saddles for which the cowboys were competing.

These shots were photographed with every consideration for pictorial value and photographic variety. There were shots framed by heads and Stetsons and corral railings. There were birds-eye shots and worm's-eye shots. The cameraman must have made an awful nuisance of himself—but he apparently took advantage of the tolerance most people

(Continued on Page 76)

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SIDNEY P. SOLOW

Ready for occupancy the latter part of this month will be Consolidated's new 16mm film laboratory, which has been especially designed for the processing and handling of the company's growing 16mm film business.

Erected on company property adjacent to its present quarters on north Seward Street in Hollywood, the modern 3-story concrete and steel edifice becomes the largest 16mm film laboratory in the world, both in size and in film handling capacity.

The increasing demands made on Consolidated by major film producers for processing 35mm color film has made it necessary for the company to take over more and more floor space formally devoted to 16mm film processing, according to Sidney P. Solow, general manager of the company's Hollywood laboratories. Ironically, this need for added facilities reached its peak just as the television industry began making increased demands on the company for 16mm film developing and printing. Plans for the new 16mm laboratory were subsequently rushed into preparation, and construction of the plant began early last summer.

A preview of the new plant reveals the intelligent thought that went into the planning, which will make this the most efficient film handling plant anywhere. Says Solow, "We have distilled all the best ideas in laboratory construction and practice that have been developed over the years, have shaken out all the frills, to make this the most efficient plant of them all."

The plant, 55 by 156 feet in extent and having a total floor area of 25,000 feet, has two stories and a basement. The whole structure was designed on the principal of straight-line flow of film from its acceptance to delivery after processing—with all major operations conducted on the first floor. Here are two modern fire-proof film vaults for raw stock, having scientific humidity and temperature control. Three separate printing rooms have the latest type indirect-type safelights, with different lights for each particular kind of film stock used. The film developing room on the same floor has two of the latest type 32mm (double-width 16mm) automatic developing machines. All tanks and moving parts are made of stainless steel. All plumbing used in the transmission of developing solutions is stainless steel tubing. A feature is the stainless steel quick-demountable couplings for the tubing, which permit taking out complete sections of the plumbing for cleaning and inspection.

The film is washed in the final stage

of development by the spray method—the only method that insures absolutely clean and unstained film, according to Solow. Just before the processed film leaves the drying cabinets, it is subjected to a protective coating. Consolidated is probably the only 16mm film laboratory which includes the protective coating as part of its laboratory service.

With 16mm neg-pos color film only a matter of time, Consolidated engineers have provided for the demands that use of this film will make on the company's facilities. The company will be able to make any changes necessary as use of this film begins, and to gradually expand its facilities in keeping with the increasing use of the film without hampering the laboratory's other operations in any way.

Continuing along on this same floor, we find the modern, full-equipped projections rooms in which all film processed by the company will be checked visually through big-screen projection before being delivered to the customer. Two 32mm projectors will be running constantly in making such checks. Afterward the film will proceed via conveyor to the hand inspectors, cutters, packers, and finally to the shipping department. The plant will have a capacity of half-a-million feet of 16mm film per day.

The second floor is devoted to customers' service. Here are a spacious lounge, two 16mm projection rooms—each with several types of screens; 20 cutting rooms, each with individual temperature control, and the negative cutting room for Republic Pictures Corp.—the parent company, incidentally.

In the basement are located the company's steam plant, air conditioning and humidifying equipment, film developing tanks, and the solutions control system.

Sidney Solow, who has been associated with Consolidated for over 20 years, says the new plant will easily care for the great expansion in 16mm film production now under way on the West coast. The company serves mainly four major groups of 16mm film producers: Business and Commercial, Educational, Religious, and Television. Solow, incidentally, has been an important contributor in the science of correct developing and printing procedure for films for television. Before satisfactory transmission of 16mm motion pictures on television was possible, it was necessary for the industry to determine the density ratios most compatible with existing electronics equipment. As a result of its extensive research and the technical assistance which the company has rendered to both film producers and TV transmission engineers, Consolidated has become a leading processor of television films on the West coast. END

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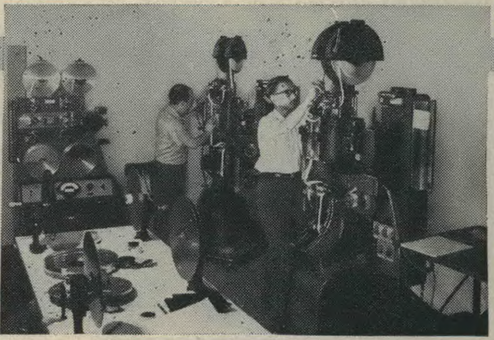

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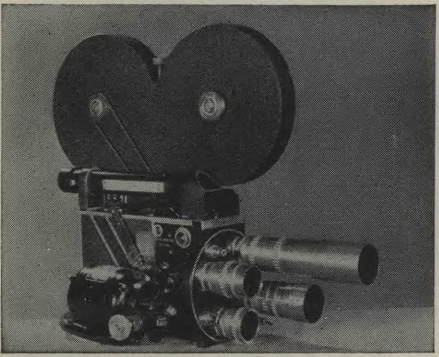

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(Continued from Page 73)

have for kids and camera addicts.

When this man edited his film he had plenty of material to work with. The brief parade sequence that opened the epic was intercut with reaction shots of kids and crowds. When action sequences weren't filmed sufficiently well in their entirety or when the action was too short or too long, he had interesting, atmospheric cuts to fall back upon. Nothing new, or original? Certainly not! Only a splendid example of following tried and true professional methods and formulae to make a picture more entertaining. And movies—whether professional or amateur—will always "pay off" on the amount of entertainment they offer audiences! END.

'FLUID' CAMERA

(Continued from Page 63)

created by that closeup carried over to the remainder of the scene and influenced the audience's reception of what followed.

A corollary to this type of shot is a device in which the camera first shows a long shot of the scene and then pushes in to a close shot of a certain segment of the action. This is a widely used type of camera movement and has the effect of first orienting the audience as to locale, action, and period, before moving in to treat dramatically a smaller part of the overall scene.

A variation of this technique is the *zoom* shot, in which for dramatic effect the camera first shows a relatively wide angle of the scene, then rapidly pushes or zooms in to a close-up of a specific detail of the scene. The zoom shot, when correctly used, is a dynamic way to focus audience attention on a dramatically important facet of the scene.

Except in a travelogue, it is not considered effective technique to pan a static object—although many film-makers have done so in an effort to force action into an otherwise dead scene. At best this is a forced technique and should be avoided except where inserted for special effect. Mere movement of the camera can never compensate for a lack of action within the scene.

Occasionally in a photoplay, the camera—in its role of all-seeing eye—becomes a wandering reporter, browsing here and there to pick up bits of action and characterization, then moving on to select other facets of the situation, the sum total of which adds up to the creation of considerable atmosphere. A notable example of this technique was used in the memorable film, "Casablanca," photograhped by Arthur Edeson, ASC. In the sequence establishing the interior of "Rick's Cafe Americain" (main locale of the story), the camera picked its way through the crowds, stopping at various tables just long enough to pick up scraps of color and atmosphere, then moving on. It moved exactly as a casual observer might move if he were threading his way through the maze of tables, catching a glimpse of this person or that and overhearing an occasional shred of conversation. The effect in the film was to set the unusual mood of this exotic locale, to identify the types and characters involved in the story, and to prepare the audience for the action that was to follow.

In studio parlance, whenever the camera moves and comes to rest on a new composition, the maneuver is known as a *camera stop.* Certain scenes, especially in musical extravaganzas, involve a great many camera stops. In fact, when this type of film was first becoming popular certain directors and cameramen (as a matter of professional achievement) used to vie with one another to see how many camera stops they could get into one continuous scene. Actually, if well done, this type of scene is more effective than a series of cuts in portraying a musical number, but when camera movement becomes an end in itself, the result is bound to be clumsy and without meaning.

One otherwise competent director of musicals and light comedies used to insist that the camera be moving in every scene. He would have the camera pushing in, pulling back, zooming down from the sky or up from the ground, whether the scene required camera movement or not. In one film this particular director shot—a film containing well over 300 scenes—there was only one scene that was absolutely a static shot. Audiences left the theatre after viewing this film complaining of headaches from being "whirled around so much."

At the other extreme was an equally competent director of dramatic themes who insisted that the camera should never be moved. His compositions on the screen were particularly forceful and artistic, but he was reluctant to move the camera for fear his careful composition would be destroyed. As a result, his action within the frame was stilted, inhibited, held back. You could almost sense his players watching for the chalk marks on the set floor so that they would not step outside the bounds of the static frame. In one drama that this director shot—a film crammed full of artistic and static compositions—there was only one short *follow shot.* The result on the screen was a static drama.

Obviously, intelligent camera movement is the result of close, careful preplanning between the director and cameraman. The director, in his interpretation of the author's screenplay, plans his action and consults with the cinematographer as to how that action can most effectively be portrayed on the screen. Often it is found that a series of consecutive compositions can be embodied in one scene and connected by well-motivated camera movement. The resulting scene (which otherwise would have been staged as a series of short choppy scenes) becomes a *fluid* continuity of changing compositions that move smoothly, one into the other.

The fluid camera is a device that belongs peculiarly to the photoplay. It has the quality of action that is essential if motion pictures are to be truly "moving" pictures. Skillfully used, camera movement gives the motion picture unlimited scope to select and present on the screen the various elements of the story in dramatic and forceful relationship to one another.

SET LIGHTING FOR SPECIAL EFFECTS

(Continued from Page 66)

diffused low-key are almost impossible to achieve in out-of-balance illumination, but the style is most valuable for the illusion of unvarnished reality which it produces.

Many film-makers fail to take advantage of the fact that lighting consists not only of highlights, but of shadow as well — and that, skilfully used, shadows can be used with striking effect to point up a screen story.

Basically, shadows give depth and modelling to a subject. Where a set is over-lit in such a way that most of the shadows are cancelled out, the result is usually flat and undramatic. But shadows carefully controlled and with suitable fill give roundness and perspective to sets and players.

Shadows can be used to create attractive and dramatic backgrounds. Cardboard cut-outs placed in front of a spot light are the simple materials necessary to project such patterns as prison bars, church windows, venitian blinds, etc. In

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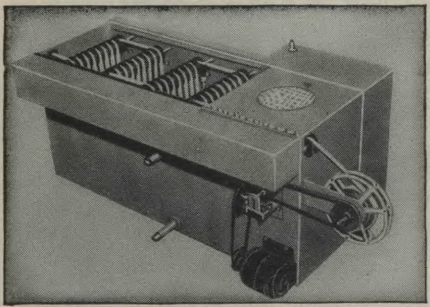

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this way, the suggestion of a full set can be projected upon a bare wall or flat, an interesting pictorial background can be achieved, and cinematic mood can be intensified.

Often shadows are used to suggest an active force threatening a character in the story. A player spotlighted in one corner of the screen with a dark mass of shadow engulfing everything else, will convey the impression that the character is being threatened by unknown hostile elements. In a chase sequence, high shadows that dart about with the fleeing character will intensify the furtive nature of the chase.

Sometimes moving shadows can be highly effective, as in a scene where the shadows of trains, cars, or people intermittently cross the players. A light going on and off outside the window of an otherwise dark room creates a highly kinetic effect.

Plane lighting is a style of set illumination in which shadows play a dominant role. This is the kind of pattern in which specific areas and planes of the set are illuminated, the rest being allowed to go dark. The players, moving from one area to another, alternately pass through highlight and shadow in a way which is dramatically striking.

Silhouette too, is an effective way to use light and shade. It is especially good on close-ups in which the characters are shown in profile. It is useful in emphasizing dialogue where the visual image would otherwise interfere. It also is a good way in which to play down one character in contrast to another who is brightly lighted.

There are several special effects which apply to situations that are bound to come up in the course of the average lamplight, firelight, flashlight, etc. We shall analyze methods of stimulating these effects with a minimum of lighting units.

Candlelight—For medium shots where the light source is not shown, use a small, unshielded No. 2 photoflood placed in the center of the table and screened from the lens by one of the characters in the scene. This will produce an overall glow, stimulating the light source of the candle. For a long shot, where the candle is seen, use spotlights (one for each character) cross-played at "candle level" and condensed with snoots or barn doors. There should also be a spot played downward from directly overhead. For close-ups, use a baby spot or "Dinky Inky" (with light diffused scrim), placed a bit below eye level.

Lamplight—Almost the same set-up as for candlelight (only somewhat brighter) in stationary shots; but when the character moves about the set, a small high-intensity "peanut" bulb can be fastened to the lamp itself on the side not facing the camera. Use an auxiliary spot, focussed softly, to follow the movement about the set as well.

Firelight—Naturally, the fire itself should be the "hottest" part of the scene in angles where it shows. Therefore it is well not to overlight the rest of the scene. For reverse angles, not showing the fire, place your key-light low in the fireplace, simulating the natural source. Use floods or spots with fairly wide diffusion. The flickering effect of firelight can be achieved quite naturally by waving a small leafy twig in front of the light.

Flashlight—This effect is simulated by means of a baby spot with a concentrated beam, located outside camera range. The operator must be careful to synchronize the movements of the spot to fit those of the flashlight itself.

Matchlight—In scenes where the character is portrayed as lighting a cigarette the glow can be simulated either by (1) fading in a concentrated diffused baby spot on the subject's face, or (2) by concealing in the subject's hand a tiny "dashboard" type auto bulb which will give just enough of a glow to simulate the matchlight effect.

The above are the simplest special lighting effects to set up, and also the ones which the advanced amateur or semi-professional will encounter most frequently in his shooting. It is well to remember that a good special effect should go unnoticed as such. In any event, where the effect seems too difficult to achieve realistically, it should be discarded and the action changed to accommodate a simpler and more natural effect.

The above article is condensed from "The Cinema Workshop," by Charles Loring.

STEREO-CINE 3-D

(Continued from Page 60)

have been experimented with, according to Raphael G. Wolff, who said that at least in theory anyone can build such a device, using any of several available makes of cameras.

"The ability to use this equipment properly," he said, "is based on a mathematical computing system which takes into account set depths, focal lengths of lenses, and other relevant data."

Stereo-Cine's camera equipment has the advantage of extreme compactness and light weight. The complete unit is smaller in size and weighs less than a blimped Mitchell BNC. At the same time, the Eclair Camerettes used are said to afford advantages not found in many other 35mm motion pictures cam-

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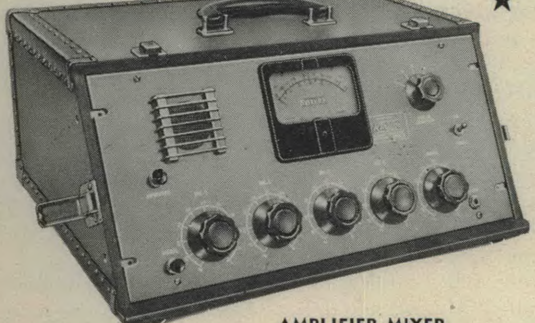

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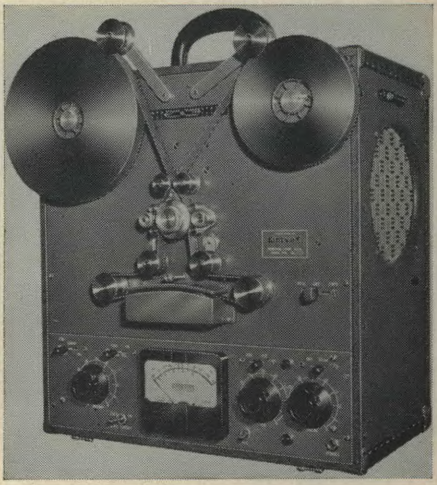

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eras. Most important perhaps is the reflex shutter system which permits viewing the scene through the reflex finder as the picture is being shot—enabling the operator to keep an accurate check on alignment.

Shooting 3-D pictures requires precise alignment of the cameras, because adjustments for parallax and interocular must be exact. Once the camera position, angle, etc., has been decided, focusing and alignment of the twin Camerettes is done by means of special loupes which fit over the film aperture in the gate of the camera with the film magazines removed. Additional alignment checks are made through use of the finders, and there is also a Mitchell type finder situated just below the reflecting mirrors, affording the camera operator a magnified, right-side-up view of the scene at all times.

In the spring of 1947, there was begun at the Raphael G. Wolff Studios in Hollywood, the first experiments in 3-dimensional films. The original plan was to make the medium available to the company's commercial clients. Late in 1951, the company decided to organize a stereo department. It assigned two of its engineers to develop a stereo camera device for 35mm. The project was speeded later in 1952 when an import-

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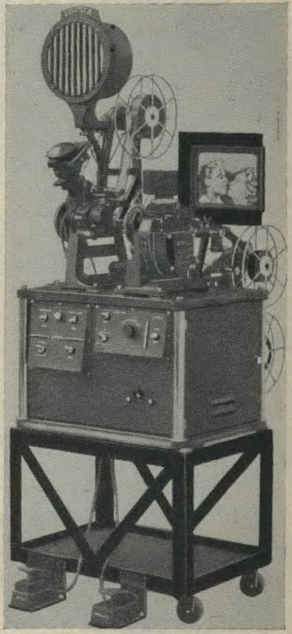

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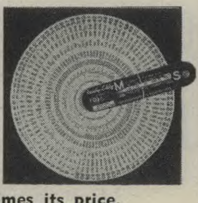

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ant client agreed to sponsor a stereo film. Tests made with the company's equipment last summer in both black-and-white and color proved highly satisfactory. About this time, due to the advent of "Bwana Devil" and Cinerama, attention of the theatrical world became focused strongly on stereo films. Wolff Studios suddenly found themselves on the proverbial ground floor, with one of the few technically acceptable 3-D cameras. Interest on part of Sol Lesser led to formation of Stereo-Cine Corporation, and the start of his initial 3-D production in color, using Eastman Color negative.

In explaining the differences in techniques between 3-D and 2-D motion picture photography, Raphael G. Wolff said: "If flexible camera equipment is used in photographing stereo films it is possible to place objects in space in their proper relation to the viewer. This is the essence of space control. Within reasonable limits we can dictate the placement of the screen plane or window. When flat film composition and lighting are used, this has inherent complications.

"In flat pictures, whether movies or any other kind of photographs, paintings or drawings, we have become conditioned to cut-offs. We subconsciously adjust for this by rationalizing that the person or object is behind a frame. In stereo films the same naturally holds true—for things behind the window; but if we place an object or person *ahead* of the window—the image appears to have been chopped off square and hung suspended by some sort of levitation. This is disturbing to our sense of logic, and the suspended object calls attention to itself. In short, it is bothersome.

"By this token, the minds not ready to accept stereo as a new medium, claim that nothing should be brought forward from the window. This is not a valid critique, and is more likely based on the inability to control images properly—indicating equipment of limited versatility.

"We can put no such restrictions on 3-D techniques for the simple reason that if the medium is to develop as it should, it will eventually lead to drama in depth—in which the window is subjugated for action that happens just ahead of the viewer and on back to infinity. This will mean new lighting and staging techniques where objects in the foreground are shaded off so that they no longer appear as severed swords of Damocles, elimination of conventional hard screen edges, and an enlargement of the reflective area to a point where it bleeds off at the extremes of the angle of human vision. The panoramic screen in which the vastness of background detracts from intimate action can be modified by vignetting down the broad expanse and focusing attention on such intimacies by bringing them out into the audience.

"Although we may be a long way from this point as yet, it is entirely possible that 3-D presentations of the future will utilize specially designed sets for better control of people or objects in space. For closeups and the foreground of action that takes place just a few yards from your eyes, sets may be dispensed with to focus consuming interest on a stage that seems an extension of your own imagination.

"While montages, extreme cuts from close to distant images or visa versa, and the dissolve, are not as practical in 3-D at the moment—it is well to remember that these are devices of the flat film, and eventually may be no more missed than the stage "aside" or the curtain between the acts of the legitimate theater. Each new medium develops its own devices to achieve transitions and dramatic effects.

"There is one aspect of the technique which defies slide rules and measuring tapes: this is the thinking and planning *in depth* which must precede production. It is not practical to take a script prepared for an ordinary flat film and shoot it in 3-D. Many moves, angles and effects common to conventional motion pictures are not possible, or even desirable in stereo films. Any stereo film which makes the best use of the new medium will have to be re-edited somewhat to make a flat film release.

"One of the simplest points of difference between the two mediums is that 3-D scenes must all run longer than the average movie scene. One will find that one's eyes will tend to hold on the

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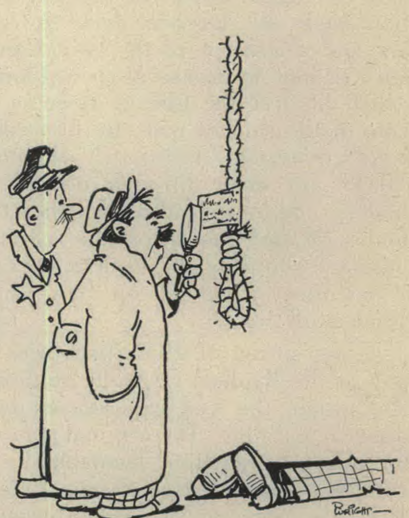

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normal 3-D scene, and scout the planes of depth reference as the action occurs. Another thing: short, extreme cuts do not work out; neither very short scenes cut together as flashes, or cuts from extreme closeups to extreme long shots. It takes the eyes an appreciable moment to accommodate for the change. It is best to lead from close, through medium to long shots. But here again, the feeling of actuality experienced by the audience more than makes up for the variance in techniques, which we in the industry will all have to become accustomed to."

FILMING A GAS INDUSTRY DOCUMENTARY

(Continued from Page 64)

the film continues with shots of a nearby lane. While the commentator tells how it might have been along this very lane that young William set out to gain fame and fortune, a distant figure in 18th century dress slowly appears. He pauses for a moment to look back and then walks slowly away in the distance. It is no surprise, after this shot, to find that we are back in 1777, and Murdoch is being interviewed for his first job in Birmingham.

From here, the film follows the progress of gas through the years, back again to the present day, when research into new and more efficient uses of gas is covered, and the final sequences depict the many ways in which gas is employed in industry.

To improve the actinic value of the gas flame, two methods were used. For small gas jets, such as in kitchen ranges, applying a spray of salt and water to the flame made the gas burn with the bright red sodium color, which photographs well. For large gas installations, such as in the reconstruction of the Lyceum Theatre demonstrations, benzole was injected into the main gas supply line, and this, too, considerably increased the photographic value of the light.

But a special difficulty was met in trying to show how a gas-operated refrigerator works. Here the gas is only visible as a single small flame about half an inch high. Even when brightened with salt and water solution, this flame was scarcely visible. The answer to this problem lay in directing a small current of air on to the flame, with an airbrush spray. This gave the flame just enough movement for it to catch the eye and to show clearly exactly what it was.

An earlier scene shows Murdoch experimenting by putting small red-hot pieces of coal in the bowl of his pipe and lighting the gas which is given off. However well the experiment may have worked originally, a surer and brighter flame for filming was given by carbide

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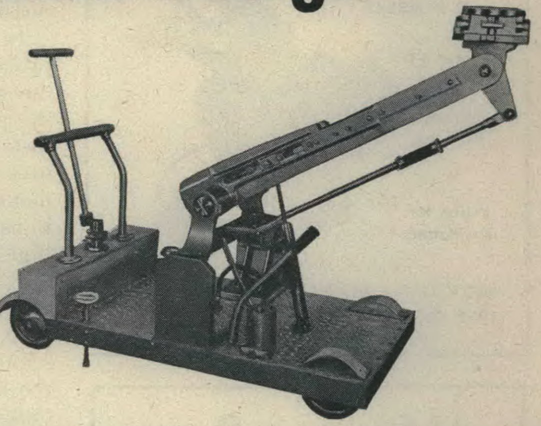

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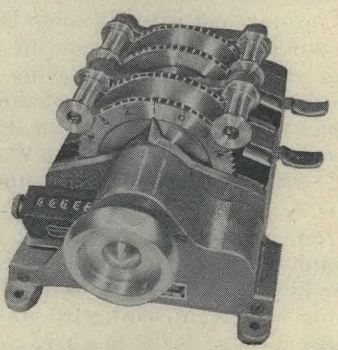

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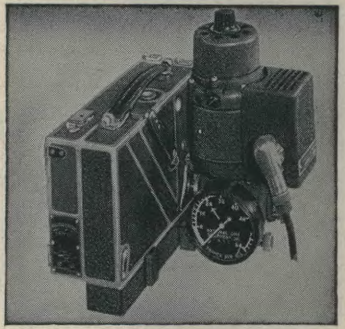

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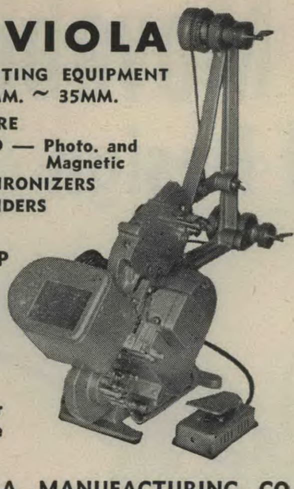

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of calcium which, when moistened, gives off a vapor, igniting readily and burning brightly.

The glow given by the elements of a domestic gas fire was filmed satisfactorily at F/2 on Plus X, but it helped if the gas pressure was above normal so that as large an area of the fire as possible became red hot.

In filming the use of gas in industrial processes, it was necessary to cut down the air which is normally mixed with the gas, so that it burned with a yellow instead of with a blue flame. This was especially true when the manufacture of dentures was filmed. Here were rows of bunsen burners, each normally giving a blue flame, almost invisible to the camera. Each Bunsen burner was adjusted to cut out the air so that the flames then caught the eye immediately the scene appeared on the screen. Of course, the burners cannot actually be used like that, but the adjustment back to blue before the work commences was shot in big close up, so that the flame can still be clearly seen.

Location and exterior shots for "The Vital Flame" were filmed with a Newman Sinclair Camera having Cooke Panchro lenses, and some of the studio scenes were shot with a Debrie. Lighting was by Mole Richardson 2 KW., 1 KW and 500 watt units. Film stock was Plus X.

The completed film, available on both 35mm and 16mm joins the extensive film library of the Gas Council and is available to approved borrowers on free loan.

HYPERFOCAL DISTANCE

(Continued from Page 70)

used for exacting work like cinematography. For still-camera work, for example, and even in some calculations for 35mm cine work, a circle of confusion .002 inch in diameter may be quite acceptable; but for really professional 35mm cinematography, and for all 16mm and 8mm cinematography (in which the relative enlargement in projection is much greater than in 35mm practice) the permissible circle of confusion must be taken as .001 inch.

The accompanying table gives the hyperfocal distances for the most commonly used substandard camera lenses over the general range of stops. But it is easy enough to figure out the hyperfocal point for any lens and stop for yourself. The formula is:

$$H = \frac{F^2}{f \times C}$$

In other words, the hyperfocal distance (H) equals the focal length of the lens (F) multiplied by itself and divided by the product of multiplying the *f*-stop (f) by the circle of confusion (C). You can see that for any one lens, two of these factors—focal length (F) and circle of confusion (C)—remain constant. The other two may vary, and therefore influence each other.

Now let's see how this works out in practice. Suppose we have a 2-inch lens and use it at *f*:2.5. Assuming the circle of confusion to be .001 inch and substituting these numerical values into our formula, we have "H" equal to 2x2 divided by 2.5 x .001. This works down to 4 divided by .0025, and gives us 1600 inches or 133 feet. If the lens is focused at the 133-foot point, everything from a point about 65 feet from the lens to infinity will be sharp.

Now, let's stop the same lens down to *f*:11. This will give us 2x2 divided by 11 x .001, which evolves to 4 divided by .011 and in turn works out to a hyperfocal distance of 363 inches or 30 feet. At this setting, everything from 15 feet to infinity will be adequately focused.

For contrast, let's consider a very short-focus lens, like the 12½mm lenses used on 8mm cameras. Working it wide open at *f*:1.9, the formula would figure out as .5 x .5 divided by 1.9 x .001, which comes down to .25 divided by .0019, and gives us 131 inches or 10.9 feet as the hyperfocal distance for this lens at this wide-open aperture. Using the same figuring for the same lens stopped down to *f*:11, we find the hyperfocal distance in this case has moved up to 1¾ feet from the camera. No wonder we get such remarkable results with fixed-focus eights!

But there are times when we may want to obtain adequate focus on some

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secondary object or person nearer the camera than either the principal subject or the hyperfocal point. Or we may want to let our far limit of good focus fall short of infinity, to eliminate a disturbing background. In this case it will be useful to know something about depth of field, and how to make it work for us. Technically, depth of field means the distance between the nearest and farthest objects in acceptably sharp focus.

If you're mathematically minded, you can determine these two points by the following formulas:

$$\text{Near} = \frac{D \times H}{H + D}$$

$$\text{Far} = \frac{D \times H}{H - D}$$

In each case, D represents the distance from camera to object, and H represents the hyperfocal distance under the particular conditions of stop, focal length and circle of confusion applying to that particular shot.

To illustrate this, suppose we use the 2-inch lens we've been talking about, at its maximum aperture of *f*:2.5. We've already found the hyperfocal distance for it—133 feet. Assuming our object is 40 feet from the camera, we get this equation:

$$\text{Near} = \frac{40 \times 133}{133 + 40}$$

This equals 5320 divided by 173, and gives us approximately 30 feet as our near limit of good focus by applying the second formula, which works out as 4x 133 divided by 133—40, or 5320 divided by 93, and gives us 57 feet as the far limit of good focus.

Since the hyperfocal distance is a basic factor in these calculations, and it, in turn, varies according to the focal length of the lens and the stop being used, a little work with pencil and paper will show you just how and why the depth of field increases as the focal length decreases or smaller stops are used, and why with longer-focus lenses, or larger apertures, the depth decreases.

An understanding of these two simple optical factors—the hyperfocal distance and depth of field—can go a long way toward simplifying your focusing problems. As I said at the start, once you know how to put the hyperfocal distances to work for you, you will know how, and to just what extent you can make any cine lens serve in an emergency as a fixed-focus, though not always universal-focus lens.

And when you have familiarized yourself with the depth of field characteristics of your lens, you'll find you can make this factor work for you in two ways, as the professional does. When you want "pan-focus" or extreme-depth effects, you can get them by using a short-focus lens well stopped down.

And when—as in making close-ups and the like, you want to focus selectively, so that your picture will concentrate attention on the subject, without intrusion from either the background or the foreground, you can do that by using longer-focus lenses and larger openings.

Neither a hyperfocal setting nor reliance on depth of field can ever altogether take the place of precise focusing on the subject. But they can come in mighty handy in emergencies!

Naturally, the figures that can be derived from these formulas can be reduced to the form of handy charts or tables. In fact they have been, and frequently, in such reference works as Jackson Rose's "American Cinematographer Handbook." But sometimes you may find yourself caught in the field, wanting in the worst way to know the answer to some problem in this line, only to find that your chart is in the camera-case five miles back! And at a time like that, you'll be well ahead of the game if you know how to figure out the answer for yourself instead of relying on a hazy memory of figures in a table you probably glanced at only casually. END

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A BUILT-IN EXPOSURE CALCULATOR

(Continued from Page 68)

scene, as reflected through the camera, through an ingenious device which permits these sectional measurements to be made of the scene without taking a conventional exposure meter into the scene to measure each section of light and dark and intermediate areas.

Mr. Coutant goes on to say: "The sensitometric exploration can be made in the focal plane of the lens on the same size image as the exposure opening; the exploration of the surface of the ground glass between the lens and this (focal plane) surface thus corresponds to the same surface of film emulsion as checking the frame on ground glass, or the reflex vision on the ground glass as seen in the viewfinder during picture taking. This translucent glass can be placed at 90° in relation to the exposure opening in such a way as to receive the image without parallax, as in the 35mm and 16-35mm Camerette.

"It is likewise possible to explore the image of the subject in front of the ground glass, using a sensitometric reader attached to the camera or independent of it. In the latter case, the sensitometric finder can be used to measure the photogrammes to be printed, the illumination and brilliance of the background, etc., by moving the photo-cell probe in front of the section to be explored. The light measurements are read from a small galvanometer dial shown in Fig. 4 just below components 60 and 61.

At this point it might be well to examine all diagrams accompanying Mr. Coutant's treatise and which have been reproduced here. Taking Fig. 3 first, as a means of orienting the reader as to the method of installation and use of the sensitometric reader, here we see the unique reflex-mirror shutter system of the Camerette which permits through-the-lens viewing of the scene as it is being photographed. In this camera, the tip of the prober (Fig. 2) with its small photo-cell would be installed in front of the ground glass convex plane of the camera, indicated in the illustration at 15.

Fig. 1 shows a typical image as seen on the camera's finder screen. The circles 1, 2, 3, etc., indicate the points read by the photo-cell prober, shown in detail in Fig. 2. The entire mechanism of the selective sensitometric reading device is shown in the exploded diagram, Fig. 4.

"When the camera is set up for shooting a scene, the image of the scene appears on the finder glass of the camera. as shown in Fig. 1. Examining this scene, we find that it is composed of various areas of light and shade in varying degrees. The photo-cell obviously would record the window area (1) as strong in light, while that part of the scene under the table (5) would be weak. Light on the different parts of subject's face (2) would vary according to the illumination used.

"To make a direct-line meter reading of the subject in this same scene with a reflected light meter would produce a questionable result, depending upon its orientation to different points of the scene—points not necessarily included in the area to be photographed. If the illumination is by artificial light, it will be necessary to take a reading at different points within the scene and then figure the average.

"With the invention described here, the brightness of the image or scene is examined in the camera, between the lens and the ground glass, with the aid

---

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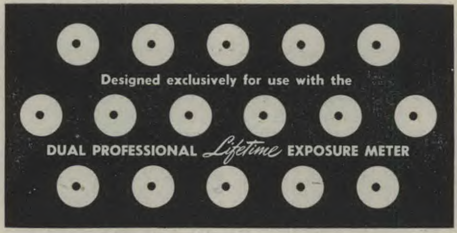
FOR YEARS PROFESSIONAL photographers have been using home-made Neutral Gray Cards for improving accuracy in exposing color film. Recently a large film manufacturer has made available a "gray card" for this purpose in an effort to simplify the use of an exposure meter for color photography. This card had to be a compromise for all the meters in the field. Even with this compromise, however, the improved reliability of the exposures obtained made it an invaluable tool.

Now DeJur Amsco Corpn, makers of DeJur exposure meters, has designed and printed a special card carefully mated to its Dual-Professional Exposure Meter. A totally new design makes this formerly bulky device pocket-sized for convenience. The polka-dot design was carefully computed to have the exact amount of white and black which would average out to the equivalent of an average subject. This average subject is situated half-way between the brightest and darkest subjects on a logarithmic scale.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In use, the Polka-Dot Target is held up against the subject with its flat side facing the camera. The Dual-Professional Exposure Meter is held 6″ away from the center of the card and pointed at its center. The actual subject being photographed is not measured at all. In this way the colors or brilliancy of the subject do not affect the accuracy of the meter in any way.

The Target makes exposure reading simple too. With the Target, only one reading is necessary. It automatically gives the average without the photographer having to make several readings and averaging them avoiding the ever-present possibility of making a mistake.

For distant subjects, it is only necessary to hold the card upright and take an exposure-meter reading from the card. As long as the subject and the card are in the same light condition (both in sunshine, for example), the reading will be accurate. For closeups of small objects like flowers, the Polka-Dot Target is a real help. The angle of "seeing" of the photoelectric cell in the Dual Professional Meter takes in a wider view than a small flower can fill, hence the meter may be reading a large area of background foliage which is unimportant. By holding the Polka-Dot Target close to the flower and reading it instead of the flower, a far more accurate exposure will be obtained.

May be used for closeup or distance readings.

Indoors the Target will find many uses too. Here it must be held as close to the subject as possible because the light varies from place to place rather quickly. Users of the Dual-Professional Exposure Meter may now take advantage of this well-known professional trick in obtaining easily and quickly accurate exposure for color photography.

of photo-cell prober, shown at 45 in Fig. 4. This exploration controlled by the galvanometer gives, for example, five values for the positions 1, 2, 3, 4, and 5 chosen as the principal points of reading of the image. In this way the exact light values of these different points of the scene are known and, by comparison with the curve of sensitivity of the film used, in which light densities are carried in ordinate and logarithm of luminosity in abscissa, the opening of the lens, the time of exposure, etc., can be chosen to get a more or less correct exposure in Zone II of the sensitivity curve.

"Figure 4 shows a method of employing the invention in a motion picture camera having a lens which can form an image either on sensitized film or on a ground glass located at 44, when the rays are hidden by the reflecting surface (42) carried by the shutter (43).

"The photoelectric cell (45) can be moved in front of the image formed on the ground glass (44) by means of a control button (46). A movement of the control toward the right or toward the left, the same as a movement upward or downward, produces a corresponding movement of the cell toward the upper or lower part of the image.

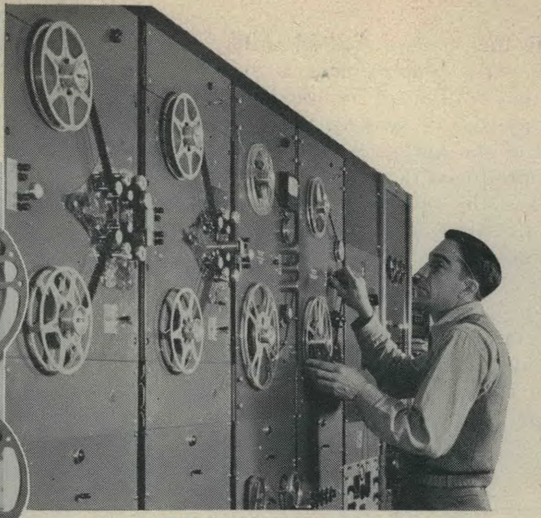
"For this purpose, button (46) is at the end of an arm (47) engaged in a cylindrical part which is mounted in a socket, not shown, in the interior of which the arm can pivot around the vertical axis V-V1; this piece (48) carries a fork (49), between the fingers of which a teat (50) is engaged, integral with a plate (51), which is monuted in the apparatus in such a way to be able to slide transversally according to arrows F-F1; a rod (52) is integral in translation to this plate (51) and carries along with it arm (53), at the extremity of which is fixed the photoelectric cell (45).

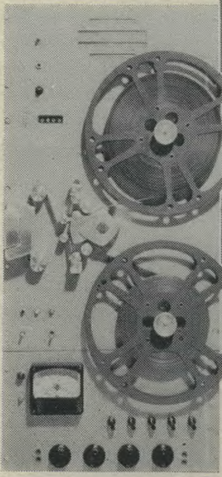
"It should be noted that a movement of the control button in a certain direction causes cell (45) to move in the opposite direction, which to the observer appears to be a movement in the same direction, it being understood that the image is inverted.

"Arm (47) is able to pivot in the interior of piece (48) around a horizontal axis H-H1; it bears at its extremity two inclined planes (54) between which is engaged a swivel (55) fixed at the end of a small rod (56) itself integral in rotation with rod 52.

Right: Moody Institute of Science Installation — using Stancil-Hoffman Magnetic Film Recorders.

Below: Model S-5 Magnetic Film Recorder—Rack Mounted.





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"When the control button (46) is raised upward, a movement is started toward the bottom of inclined planes (54) which draws swivel (55) toward the right of the figure; an extorsum rotation is produced in rod (52) and arm (53) draws the photoelectric cell (45) in the direction of arrow F3 which corresponds to the upper part of the image.

"The desired result is thereby obtained: the upward movement of button (46) produces a movement of the photoelectric cell (45) toward the top of the image and inversely. This cell is, of course, connected by conducting wires (58) and (59) to switches (60, 61), which are connected electrically to a galvanometer.

"Window (62) limits the movement of arm (47) in such a way that cell (45) cannot normally go beyond the limits of the image formed on the translucent glass (44); this window however has a notch (63), in which arm (47) may be engaged when there is no wish to use cell (45); this same cell is then engaged in a corresponding notch (64), outside of the field of vision.

"The system of automatic sensitometry described above has recently been tried with success and is on the way to being applied as a regular procedure in movie and television studios in Europe."

MY COUSIN RACHEL

(Continued from Page 59)

platonic behavior toward each other. It had to be implied (but could not, of course, be shown) that from this point on they were engaging in intimacies which (in that day and age, at least) were not bantered about in polite conversation.

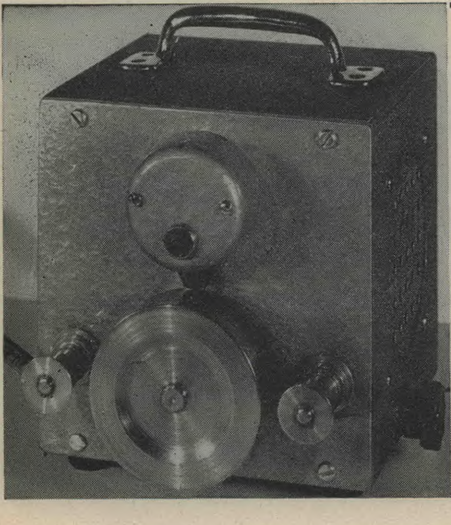
To put across this important story point so that no one could be shocked, La Shelle rigged a photographic gimmick. He utilized an optical flat several inches long, left one end clear, and covered the rest of it with progressively heavier swirls of vaseline. As the camera zoomed into close-up of a kiss realistically feverish enough to leave bruises on Miss de Havilland, a camera assistant slid the optical flat before the camera lens from its clear position to its most heavily diffused extreme. The resultant photographic effect puts over the idea in no uncertain terms. In fact, its import could be missed perhaps only by the most naive.

Perhaps the most striking sequence in the film, from the visual standpoint, is that which portrays the delerium of the male lead as he writhes about in the throes of a serious illness. The effect had to vary back and forth between seeming realism and pure fantasy. Throughout the montage the character lies on his bed in the foreground of the frame, profile to camera. During the flashes of realism, the background of his bedroom was projected on a process screen behind him, and other characters played their action toward him. For the flashes of fantasy, the main character retained his static foreground position, but the sound stage behind him was filled with cross-lighted smoke, creating a white haze out of which ghostly figures seemed to materialize. The two effects were made to blend smoothly into each other by means of optical dissolves.

As part of the same sequence the hero imagines himself being married to the heroine. Clad in her wedding gown, she appears out of seeming nothingness (swirling smoke against a plain gray flat). As she comes up into close-up, the hero (until then crouched down below camera range) rises into the scene to join her, and the camera does a 180° *pan* with them as the two start down the aisle toward a more-or-less realistic wedding ceremony—but here again use of the diffused optical flat lends just enough unreality to tie the scene into the montage of delerium.

The final sequence of the film takes place in a rock-filled gorge near the seashore, which is spanned by an ancient stone bridge and a makeshift wooden bridge from which Rachel falls to her death. A search of the California coast was made for just such a location. A suitable site was found, but it was decided that the fog, the varying light, and effect of the uneven pounding of waves on the sound track would have made shooting rather difficult there. Instead, the scene was reconstructed on an exterior set at the studio, a long trough or tank known as "the moat," which has been the setting for a great many water scenes in earlier Fox productions. This was filled with rocks and bridged, and completely canvassed over to exclude outside light. Two giant process screens were set up in the background, and upon these were projected scenes of huge waves crashing against the shore. The set was lighted to duplicate a bleak exterior; wind machines were started; slight fog effects were added—and the result is a perfectly controlled visual atmosphere that looks more real than the real thing.

It is not to be implied, however, that tricks and gimmicks are the elements that make the photography of "My Cousin Rachel" an outstanding example of creative lensing. It is rather the over-all quality, approach and sure technical skill of La Shelle's visualization that rates honors (Academy or otherwise) for his work on this film. It is not enough to say that his light sources are authentically motivated, because he uses shadow as well as light to create mood and to model his characters strongly.



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Nor does he lack the courage to let actors walk into partial or complete shadow from time to time, for dramatic effect.

His lighting of leading man Burton gives this character great strength and virility, plus a pure animal force that practically leaps off the screen. It can also be said that Miss de Havilland never looked better, or more "ravishing," as the press agents like to say. She radiates sheer, undiluted sex—a quality which must be evident if the audience is to accept some of the seemingly illogical behavior of her leading man.

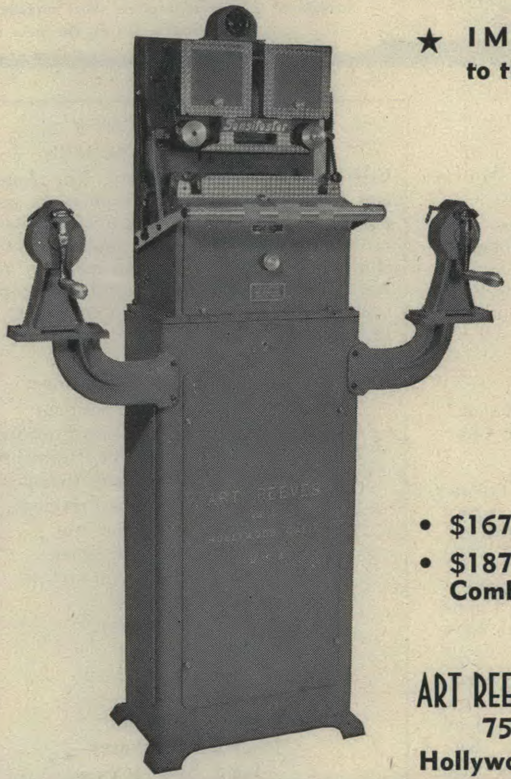
For several years now, Joseph La Shelle, ASC, has been known as Hollywood's foremost exponent of the moving camera. He shoots with the camera always mounted on a small, highly maneuverable crane, lacing together a dozen or more compositions into one continuous "take" by means of fluid camera movement. This technique was evident in "Laura" (which won him an Academy award), in the magnificently photographed "Hangover Square," and in most of his other outstanding jobs of cinematography in recent years. The fact that camera movement is somewhat less extensively used in "My Cousin Rachel" is explained by him in a general discussion of his own approach to filming.

"The function of the motion picture camera is to help tell a dramatic story," he points out. "Because of this, the camera does not exist for its own sake, but is part of the teamwork of production set up to tell that story in the most forceful and effective way. The moment that photography calls attention to itself as a separate craft, it fails in its overall purpose."

He goes on to say: "The director of photography approaches each sequence as a new and separate problem, and he adapts his technique to suit that particular problem. The cinematographer who always uses low angles, or always uses high angles, or always moves the camera no matter what the demands of the sequence, makes the mistake of letting a set style overide an individual approach to the problem. He restricts himself to a set pattern of mechanics that may not suit the dramatic situation at all."

"I like to use camera movement when it is called for to follow the action of players, and to tie situations together," he continues, "and this technique is especially effective in a modern action story where the camera adapts its pace to the pace of the dramatic action and thereby helps to keep things moving. However, in my last two pictures, "Les Miserables" and "My Cousin Rachel," I used camera movement more spar-

(Continued on Page 89)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★ ★ ★ ★ ★ ★ ★ ★

Columbia

• William Bradford, "Saginaw Trail," (Gene Autry Prod.) with Gene Autry, Smiley Burnette. George Archainbaud, director.

• Charles Lawton, "Cruisin' Down The River," (Technicolor) with Dick Haymes, Audrey Totter, Billy Daniels, Bell Sisters, Connie Russell, Cecil Kellaway, Douglas Fowley, and Larry Blake. Richard Quine, director.

Metro-Goldwyn-Mayer

• George Folsey, "The Band Wagon," (Technicolor) with Fred Astair, Cyd Charisse. Vincente Minnelli, director.

• Robert Surtees, "Mogambo," (Technicolor) with Clark Gable, Ava Gardner, Grace Kelly and Douglas Sinden. John Ford, director.

• Ray June, "A Slight Case of Larceny," with Mickey Rooney, Eddie Bracken, Elaine Stewart, and Marilyn Erskine. Don Weis, director.

• Joseph Ruttenberg, "Latin Lovers," (Technicolor) with Lana Turner, Ricardo Montalban, John Lund, Louis Calhern, Jean Hagen, Beulah Bondi, Eduard Franz, Rita Moreno, and The Modernaires. Mervyn LeRoy, director.

• Hal Rosson, "Fame and Fortune," with Spencer Tracy, Jean Simmons, Teresa Wright, Tony Perkins, Kay Williams, and Mary Wickes. George Cukor, director.

• George Folsey, "All The Brothers Were Valiant," (Technicolor) with Robert Taylor, Stewart Granger, Elizabeth Taylor, Betta St. John, James Whitmore, Keenan Wynn, and Kurt Kasznar. Richard Thorpe, director.

• Willim Mellor, "Affairs of Dobie Gillis," with Debbie Reynolds, Bobby Van, Barbara Ruick, and Bob Fosse. Don Weis, director.

Paramount

• Lionel Lindon, "Here Come The Girls," (Technicolor) with Bob Hope, Tony Martin, Arlene Dahl. Claude Binyon, director.

• Ray Rennahan, "Arrowhead," (Technicolor) with Charlton Heston, Jack Palance, Katy Jurado, Michael Keith, Mary Sinclair, Michael Shannon, Judith Ames, and Milburn Stone. Charles Marquis Warren, director.

• Daniel Fapp, "(Untitled)" with Dean Martin, Jerry Lewis, Donna Reed, Barbara Bates, Don Porter, and Joseph Calleia. Norman Taurog, director.

• Lionel Lindon, "Sangaree," (Technicolor) with Fernando Lamas, Arlene Dahl, Patricia Medina, Francis O'Sullivan, Charles Korvin, Tom Drake, John Sutton, Willard Parker, and Lester Matthews. Edward Ludwig, director.

Republic

• John L. Russell, Jr., "City That Never Sleeps," with Gig Young, Mala Powers, Edward Arnold, Marie Windsor, and Wally Cassell. Producer-director, John H. Auer.

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20th Century-Fox

• Harry Wild, "Gentlemen Prefer Blondes," (Technicolor) with Jane Russell, Marilyn Monroe, Charles Coburn, Elliott Reid, and George Winslow. Howard Hawks, director.

• Charles G. Clarke, "Fight Town" (Technicolor) with Jeanne Crain, Dale Robertson, Richard Boone, Carol Mathews and Carl Betz. Harmon Jones, director.

• Leon Shamroy, "White Witch Doctor," (Technicolor) with Susan Hayward, Robert Mitchum, Walter Slezak. Henry Hathaway, director.

• Joseph LaShelle, "Dangerous Crossing," with Jeanne Crain, Casey Adams, and Carl Betz. Joseph M. Newman, director.

Universal-International

• Charles Boyle, "The Stand At Apache River," (Technicolor) with Stephen McNally, Julia Adams, Hugh Marlowe, Hugh O'Brian, Russell Johnson, and Jaclynne Greene. Lee Sholem, director.

• Carl Guthrie, "All I Desire," with Barbara Stanwyck, Richard Carlson, Maureen O'Sullivan, Richard Long, Marcia Henderson, Lori Nelson, and Billy Gray. Douglas Sirk, director.

• Russell Metty, "It Happens Every Thursday," with Loretta Young, John Forsyth, and Edgar Buchanan. Joseph Pevney, director.

• William Daniels, "Drifting," with Tony Curtis, Joanne Dru, and Lyle Bettger. Rudolph Mate, director.

• George Robinson, "Abbott & Costello Meet Dr. Jekyll and Mr. Hyde," with Bud Abbott, Lou Costello, Boris Karloff, Craig Stevens, and Helen Westcott. Charles Lamont, director.

Warner Brothers

• Edwin DuPar, "The System," with Frank Lovejoy, Robert Arthur, Dan Seymour, and Victor Perrin. Lewis Seiler, director.

• Robert Burks, "The Grace Moore Story," (Technicolor) with Kathryn Grayson, Walter Abel, Merv Griffin, Ann Doran, and Rosemary DeCamp. Gordon Douglas, director.

• Wilfred Cline, "Calamity Jane," (Technicolor) with Doris Day, Howard Keel, Allyn McLerie, Dick Wesson, and Philip Carey. David Butler, director.

• Ed Dupar, "The Eddie Cantor Story," (Technicolor) with Keefe Brasselle, Marilyn Erskine, Aline McMahon, Gerald Mohr, Arthur Franz, Will Rogers, Jr., and William Forrest. Alfred E. Green, director.

• Ted McCord, "Sulu Sea," with Burt Lancaster, Virginia Mayo, and Hayden Rork. Arthur Lubin, director.

Independent

• James Wong Howe, "Main St. To Broadway," (Cinema Prodns.) with Tallulah Bankhead, Olivia de Haviland, Faye Emerson, H. Fonda, R. Harrison, M. Martin. Tay Garnett, director.

• Harry Stradling, "A Lion Is In The Streets," (Cagney Prod.) (Technicolor) with James Cagney, Barbara Hale, Ann Francis, Lon Chaney, Jr., Frank McHugh, Mickey Simpson, John McIntire. Raoul Walsh, director.

• John Seitz, "Fort Algiers," (Erco Prod.) with Yvonne De Carlo, and Carlos Thompson. Lesley Selander, diretcor.

• Benjamin Kline, "No Escape," (Matthugh Prod.) with Lew Ayres, Sonny Tufts, Marjorie Steele, Dabbs Greer, Robert Carson, Barbara Morrison, and Rennie McEvoy. Charles Bennett, director.

• Ernest Laszlo, "The Moon Is Blue," (Preminger-Herbert Prod.) with William Holden, David Niven, Maggie McNamara, Dawn Addams, Tom Tully, and Fortunio Bonanova. Otto Preminger, director.

• Stanley Cortez, "The Neanderthal Man," (Wisberg-Pollexfen Prod.) with Richard Crane, Robert Shane, and Doris Merrick. E. A. Dupont, director.

'MY COUSIN RACHEL'

(Continued from Page 87)

ingly—though not consciously so— for the simple reason that both of these films were period pieces. To have used extensive camera movement would have forced into them an artificially 'modern' pace out of key with the periods and locales."

With Academy Awards time practically upon us again, it is a certainty that one of the leading contenders for the black-and-white cinematography award will be Joseph La Shelle for his masterful lighting and camera treatment of "My Cousin Rachel."

WHAT'S NEW

(Continued from Page 56)

weight, and compactness are important features claimed for the equipment in addition to its prime qualifications of flutter-free motion, wide-range response spectrum, high dynamic range, clean distortion-free sound, and maintenance-free operation.

Comprehensive technical data sheet may be had by writing either Camera Equipment Company, or Magnasync, P. O. Box 707, North Hollywood, Calif.

Expansion For Kinevox — Kinevox, Inc., 116 So. Hollywood Way, Burbank, manufacturer of the Kinevox portable synchronous magnetic film recorder and associated equipment, has purchased additional ground adjoining its present factory and will erect an addition to its present building to take care of its expanding business.

Company has recently developed several new items of film and TV production equipment, including an automatic film slater, closed-circuit television camera chain with remote control, and a compact portable tape recorder about the size of a small portable radio, for reportorial and interview recording.

Effects, Titles and Miniatures — Ray Mercer & Company, 4241 Normal Ave., Hollywood 29, Calif., announces a steped-up production program which will enable company to accommodate the increasing needs of independent film producers and makers of TV films for special photographic effects, titles and miniature work. Company currently is supplying most of the major TV film producers in Hollywood with special effects footage and title work.

Company has available an interesting comprehensive chart showing all the optical effects designs which it makes available, plus containing technical data of value to film makers. Copies are available free by writing the company.

Wirgin Exposure Meter — Camera Specialty Company, 50 West 29th Street, New York 1, N. Y. announcs it has started production of the Wirgin exposure meter for still and movie cameras. This meter is probably the smallest extinction type meter ever made—measures barely over one inch long and slightly more than ½ inch wide. A folding book-type cover completely closes the meter for storing and agains dust. The Wirgin exposure meter gives complete readings in one operation. Diaphragm readings are from F/2.0 to F/32. Speeds are from 1/500 to 8 seconds. The Wirgin exposure meter retails for $2.25.

BULLETIN BOARD

(Continued from Page 54)

operative cameraman to the regular crew of five on 3-D feature shooting.

The companies owning the 3-D camera equipment, which is leased to producing companies, on the other hand wish to provide their own 3-D technicians to assist in the calculations which they claim is necessary for each shot in 3-D cinematography.

•

THE ASC LOST THREE members last month through the deaths of Gordon Jennings, Jerome Ash, and Joseph DuBray.

Gordon Jennings, 56, was head of Paramount Pictures special effects department and winner of six Academy Technical Awards. He died January 11 at Lakeside Country Club, Hollywood while playing golf.

Ash, a veteran cinematographer who retired recently after 20 years at Universal-International Studios, died in San Francisco January 5th.

Joseph DuBray passed away recently in France, in a small town near Paris. He retired from active photography in 1947. Until his death he had continued his membership in the ASC as a nonresident member. At one time he was associated with the Bell & Howell Company as Western District Manager.

•

WINTON HOCH, ASC, last month was signed by Cinerama Productions to a term contract involving his services as a producer, director and cameraman. The company is currently preparing its first Hollywood production using the Cinerama cameras.

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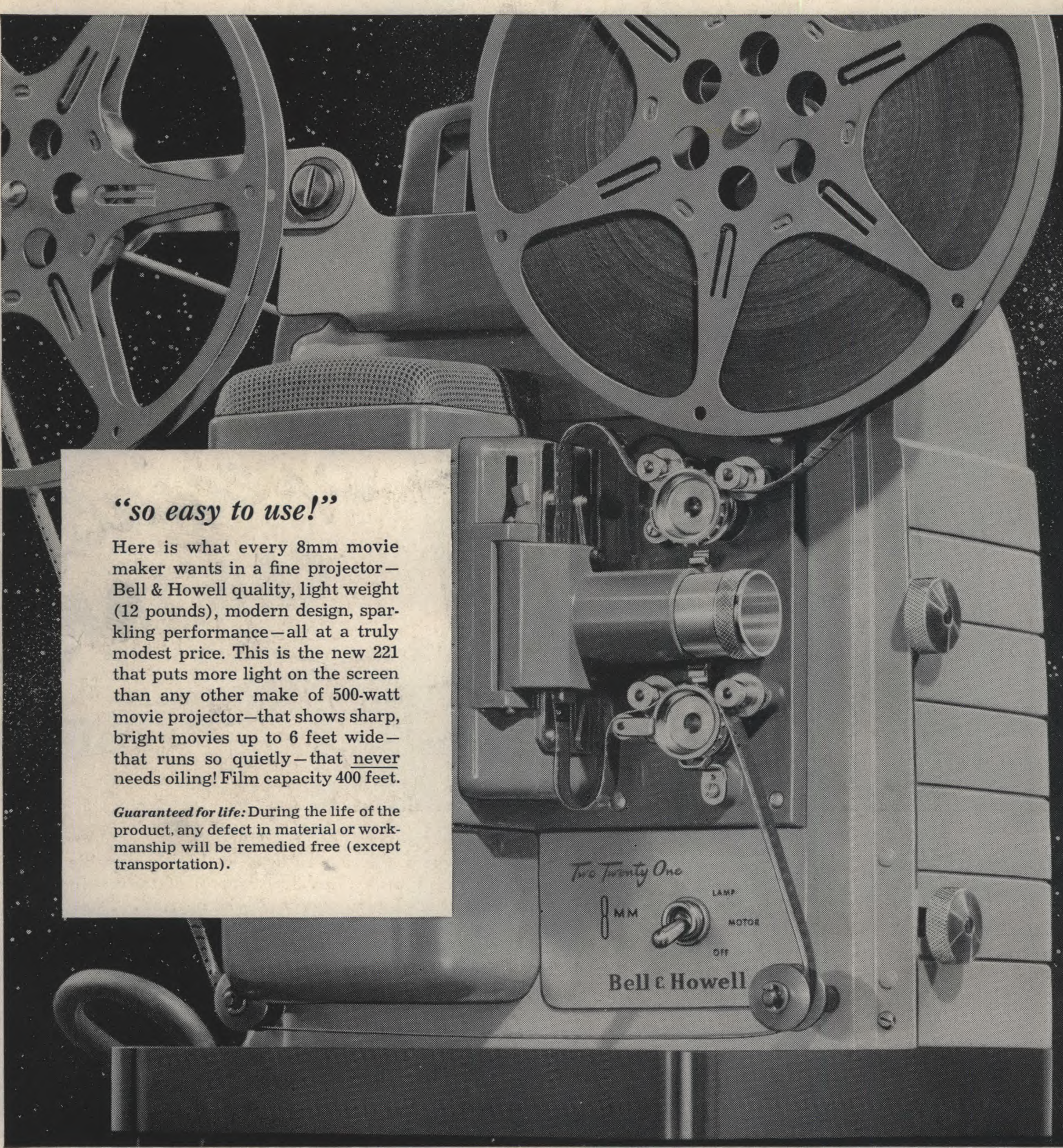

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